

No. 9.

"The Profitable Farm & Garden" Handbooks.

THE
HORSE:
ITS CARE
AND MANAGEMENT.



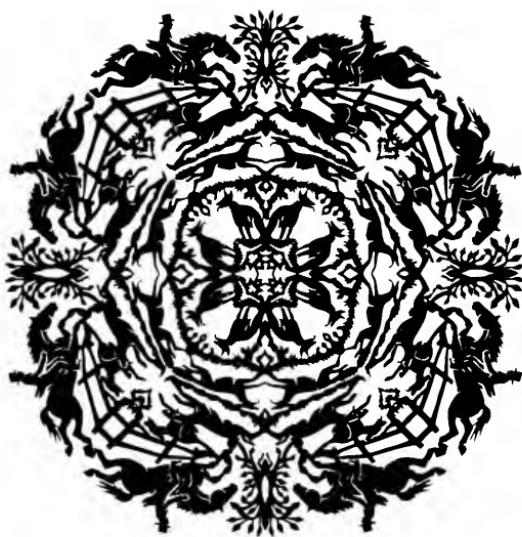
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JOHN A. SEAVERNS

No. 9.

“Farm and Garden” Handbooks.

THE HORSE : ITS CARE AND MANAGEMENT.

A Practical Treatise on the Breeding, Rearing, Feeding, Ailments, Diseases, and General Treatment of the Horse, including the Cob, Pony, Hackney, and Nag ; with Hints on Stable Construction, Breaking-in, Buying, etc. ; and the Management of the Donkey.

BY

HENRY E. FAWCUS.

(*A well-known Expert on Horses, and Author of “Horse Buying and Management.”*)

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(*Editor of “Farm and Garden.”*)

ILLUSTRATED.

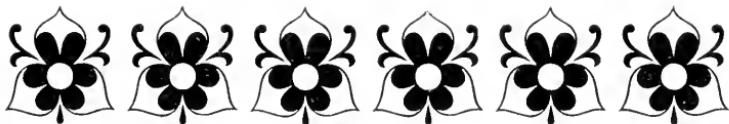
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FOREWORDS.

A POPULAR Handbook devoted to the Breeding, Rearing, Feeding, Care and Management of the Horse, adapted to the needs of Small Holders and Horse-keepers generally, has been repeatedly asked for by the readers of "Farm and Garden," and, in order to meet this demand, we decided to include the present volume in the series of Handbooks now being issued from the office of the above-mentioned journal.

This Handbook has been written by a thoroughly competent expert on all that pertains to the Horse, and what he has to say, therefore, in the following pages, is the reflex of exceptional experience and observation. In the various chapters he has carefully and consistently borne in mind the requirements of the several classes of Horse-breeders and Keepers, and the information imparted will, consequently, prove invaluable alike to the Small Holder, Farmer, Contractor, Horse-owner, Carter, Waggoner, or Carman, Groom, or Coachman; in fact, to everybody who owns or is responsible for the care and management of a horse of any type.

The existing works dealing with the breeding, care and management of horses are mostly too technical, too bulky, and too expensive to meet popular requirements. The present volume being of handy size, and inexpensive withal, as well as teeming with sound, practical advice, conveyed in simple, lucid language, should meet with popular favour at the hands of all who are interested in horses. The Small Holder especially will find the author's remarks on foods and feeding of inestimable value. A good many of the ailments of horses are due to injudicious feeding with unsuitable foods, and hence if

the reader will follow the Author's excellent advice on these subjects, he will not only maintain his animals in sound health and obtain a greater average of working power from them, but also effect a considerable saving in the cost of their maintenance.

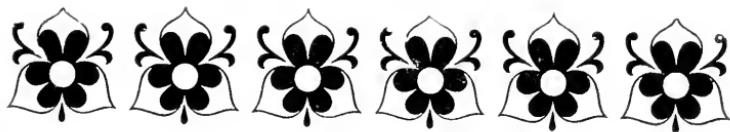
The Author's advice, too, about the stable, its construction, fittings, etc., is especially commended to the reader's notice. Generally speaking, sufficient attention is not paid to proper ventilation, freedom from draughts, cleanliness, etc., with the result that the health and life of a horse are often considerably affected thereby.

Then the chapters dealing with the ailments and diseases form by no means the least valuable feature of this volume. Each ailment or disease is carefully dealt with, and the best remedies described. Everyone having the care of a horse ought to make himself familiar with its chief ailments and diseases, and the best means of effecting simple cures.

The term horse, as used in the foregoing remarks, embraces every type of horse, including the Cob, Nag, Pony, Hackney, Punch, Shire, Clydesdale, etc. We have deemed it advisable also to include a chapter devoted to the feeding, care, etc., of that most useful allied animal, the Donkey, as the latter is often kept in conjunction with a Horse on Small Holdings, as well as being frequently the sole animal for draught purposes.

It is, however, unnecessary for us to further dilate on the contents of this volume; suffice it to say we have endeavoured to supply, in addition to the valuable text, a large number of illustrations of types of horses—Shires, Cobs, Hackneys, Ponies, etc., that have been renowned by their prize-winning achievements at leading shows, as perfect representatives of their particular breed.

A third edition having been called for, we have taken the opportunity of adding a few new illustrations, and revising the text where necessary. We hope in its present form the Handbook will meet with as good a reception as its predecessor.



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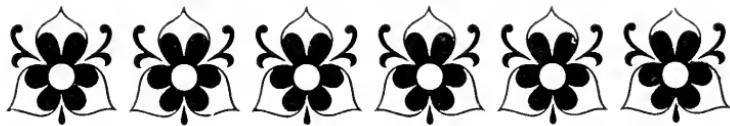
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The Horse : Its Care and Management.

CHAPTER I.

FOODS FOR HORSES.

THE foods used in the feeding of horses may conveniently be divided into four separate groups; these are corn, dry fodder, grass and green forage crops, and miscellaneous foods.

Corn.—Corn furnishes the necessary strength and energy required by horses doing work, and it is not possible to keep a horse in good working condition without an adequate supply of this kind of food. The harder a horse is worked, the more corn must be supplied to it. The kinds of corn suitable for feeding to horses on farms and small holdings are oats, maize, beans, peas, and barley.

Oats are most commonly used for horse feeding purposes in this country, and are generally considered to be the best kind of horse-corn. They vary much in regard to their quality and their weight per bushel, and all samples of oats

are, therefore, not alike in their feeding value. Oats of good quality, and of heavy bushel-weight, are plump and short, the grains having large, mealy kernels, and being covered with very thin and but little husk. Oats of poor quality, on the other hand, can easily be told by the grains being long and thin, and very light in weight, while they are covered with much and thick husk, and contain only a small amount of kernel. Oats should have a sweet, healthy smell, and be quite free from mouldiness. If they are in good and dry condition, they will "rattle like shot," when a handful is taken out of the sack and dropped into it again. A good sample should always be free from dust and dirt. New oats are characterised by an earthy smell, and frequently by the grains being comparatively soft. They are not nearly so wholesome as old oats, and, if fed in large quantities, they often cause scouring, and upset the digestion. Feeding with new oats should therefore be avoided, but if they must perforce be made use of, not more than six pounds a day should be fed, and they should be mixed with old oats or with maize. At the end of five months after harvesting, oats need no longer be regarded as "new." There is nothing to choose between white oats and black oats as regards their suitability for horse-feeding purposes, both being equally suitable. In the market, a sample of white oats generally commands a better price than a black sample of similar quality and bushel weight, because many horse-owners prefer white oats to black ones, but in reality the colour does not affect the quality. Black oats generally yield better crops on very light soil than white oats, and the question whether white or black oats should be grown, depends chiefly on the nature of the soil farmed. In storing oats after they have been threshed, it should be seen that the place is dry and well ventilated. The oats should be spread out pretty thinly on the floor, and it is a good plan to turn them over occasionally with a shovel, so as to insure their keeping in good condition.

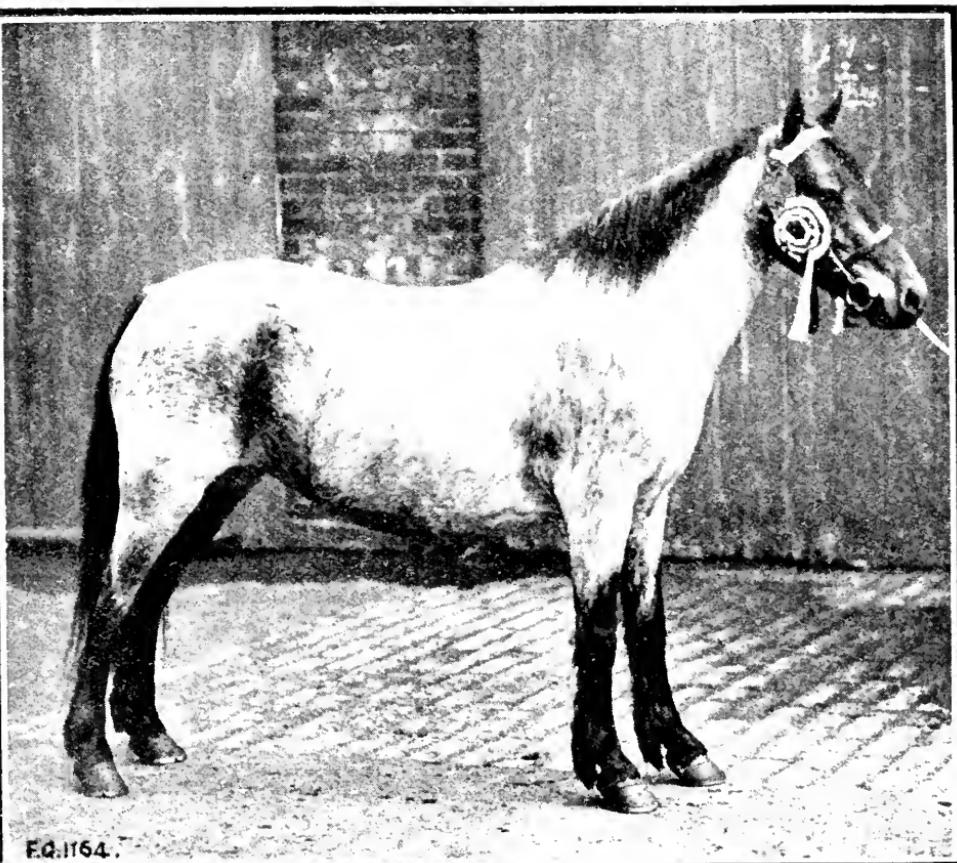
Maize is a very useful and suitable food for horses on farms and small holdings. The cost of maize is less than that

of oats, as a rule, and it is an economical foodstuff to use. If it is necessary to buy corn for the horses, it will generally be cheaper to buy maize than oats. In comparing the respective cost of oats and of maize, it must be remembered that a quarter of oats weighs from 304 to 336 pounds, while a quarter of maize weighs 480 pounds. Supposing a good-class sample of oats has been grown at home, it will be a profitable plan to sell all, or some, of them, if a satisfactory price can be obtained, and to buy maize in their stead for feeding to the horses. The entire daily allowance of corn may consist of maize if no oats are available, but a mixture of maize and oats is preferable, especially when the horses are worked very hard. The maize used for horse-feeding purposes is of the large, flat kind, generally known as "dent" maize. When buying maize, it should be seen that it is in sound condition and free from mouldiness. Whether maize is mouldy or not can readily be detected by its smell. Mouldy maize often is the cause of digestive troubles in horses, and such must, therefore, not be fed. Care should be taken to store maize in a dry and airy place.

Beans are a very rich food, and possess heating properties. They are highly strengthening, and a small allowance may be usefully included in the corn ration of horses when they are worked extra hard. They are unsuitable for horses doing only a small amount of work, as, in that case, they are liable to heat the system, and to cause the legs to "fill." If a horse is in a very poor condition, and requires feeding up, an allowance of beans will help the animal to lay on flesh quickly. On heavy land, a crop of beans may be grown for the horses, if desired. As beans are an expensive foodstuff to buy, their purchase for horse-feeding purposes is not to be recommended. Beans must be "old" before they are really fit as a food for horses, and they cannot be considered as "old" until at least six months have elapsed after they have been harvested.

Peas.—The same remarks that have been made in regard

to beans apply to peas as a horse-food. Peas are, however, not quite so heating, nor quite so rich, as beans. As peas are a light-soil crop, they can be grown for the horses on farms and holdings which are not suitable for the growth of beans.



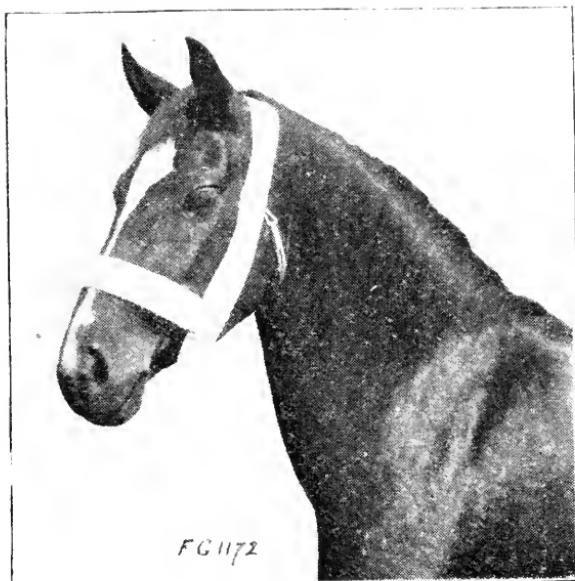
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A USEFUL TYPE OF PONY—WELSH PONY MARE.

(Photo: Sport and General.)

Barley.—Not infrequently, the barley crop grown on a farm does not come up to malting requirements, but is only of an inferior quality, representing what is known as “feeding” barley. Instead of selling this at a low price, it will usually be more economical to feed it at home. Barley is

quite suitable for horse-feeding purposes, and one pound of it may be regarded as equal in feeding value to one pound of medium-quality oats. While it would not be wise to feed a large quantity of barley to horses not accustomed to this food, for fear of causing digestive disturbances, a daily allowance of as much as nine or ten pounds can well be fed, once the horses have become used to it.



A HACKNEY PONY'S HEAD.
(Photo by G. H. Parsons.)

Dry Fodder.—The dry fodder used for horse-feeding purposes includes hay, straw, and chaff, or "cavings." Horses require a bulky diet, and the feeding of a sufficiency of bulky food is absolutely necessary, if the horses are to keep in health, and their digestion is to remain in proper working order. Corn alone is quite insufficient to satisfy the requirements of horses, and to appease their hunger, although it may furnish them with all the actual nourishment they require. Even if a horse gets an unlimited supply of corn, it will require some

bulky forage in addition. Dry fodder supplies the necessary bulk in the diet of stabled horses, while it also, of course, furnishes more or less nourishment to them.

Meadow-hay.—Of the various kinds of hay, meadow-hay is most commonly used for feeding to horses. It should be in sound condition, having a pleasant smell, and being as free from dust as possible. Mouldy hay is unwholesome, and may give rise to digestive disturbances, hence it must not be fed to the horses. Slightly browned hay, the brown colour of which is due to the hay having "heated" in the stack, is quite suitable for horse-feeding purposes. Some horses prefer brown hay to that of green colour. Hay which has undergone an excessive amount of heating in the stack, and which, in consequence, is of a very dark brown colour, and has a very strong smell, has lost some of its original nourishment; it is not very suitable for horses, and is not liked by them as a rule. Usually, horses prefer meadow-hay of a somewhat hard character to that which is very soft, though this is not always the case. A good sample of meadow-hay should contain a fair proportion of clover, and should be free from an appreciable admixture of weeds.

Seeds-hay and Clover-hay are very suitable for farm horses, and are much liked by them, if the stems in the hay are not too hard and thick. Sainfoin-hay and lucerne-hay are also excellent horse fodder, provided the hay has been cut at the proper time, and has been carefully saved. In making hay from seeds, clover, sainfoin, or lucerne, it is essential that the plants should be cut while still young, and before their stems become hard and woody. If the plants are allowed to grow too old, the hay will be of inferior feeding value, and unpalatable to the horses. In curing the hay care must be taken to handle it carefully, so as to prevent the leaves of the plants from breaking off. The leaves are the most valuable part of the various kinds of hay just mentioned, and if many of these are lost in the process of curing, the hay loses much of its value.

Straw.—Although straw does not contain much actual nourishment, it is a useful adjunct to the diet of horses, on account of its bulky character. Fed in large quantities, straw has a binding effect on the bowels, but the addition of a moderate allowance of it to the food is beneficial to the digestion. Oat-straw is much superior to the straw of other cereals for feeding purposes, and it is much the best to feed to horses. If, however, no oat-straw is available, other kinds of straw can be used. It should be seen that the straw is dry and sound, and free from "rust." The haulm of peas may be fed to horses, provided it be in sound condition; it is generally relished by them.

Chaff or Cavings.—The chaff, or "cavings," obtained when corn is threshed, can be utilised for horse-feeding purposes, excepting the cavings of barley. The long awns on the latter render barley-cavings unsuitable and dangerous for horse-feeding purposes. For feeding purposes, cavings may be considered as equal to straw.

Grass and Green Forage Crops.—Grass and green forage crops are of great importance in the feeding of horses on farms and small holdings, these foods being both economical and very wholesome. During the spring, summer, and early autumn, they, to a large extent, can take the place of dry fodder, whilst when they are available the corn ration can also be reduced to some extent. Grass is fed to the horses by turning them out to graze after their day's work is finished, and leaving them out all the night. Green forage crops are cut and fed to the horses in the stable, this plan being known as "green-soiling." The forage crops that are suitable for horse-feeding purposes are vetches (tares, rye, crimson clover (*trifolium*)), lucerne, and sainfoin. The younger these various crops are when they are cut, the more are they relished by the horses, and the more strength-giving nourishment do they contain. On account of their sappy character, they are cooling and laxative in their effect; when fed in large quantities to horses not accustomed to being fed on green forage,

they at first cause scouring. If allowed to get too old before being cut, green forage crops become stemmy and comparatively dry and tasteless; under such circumstances, they have lost much of their cooling and laxative effects, and are not relished nearly so much by the horses as they are when quite young and full of sap. The remarks made in regard to green forage crops apply equally to pasture-grass.

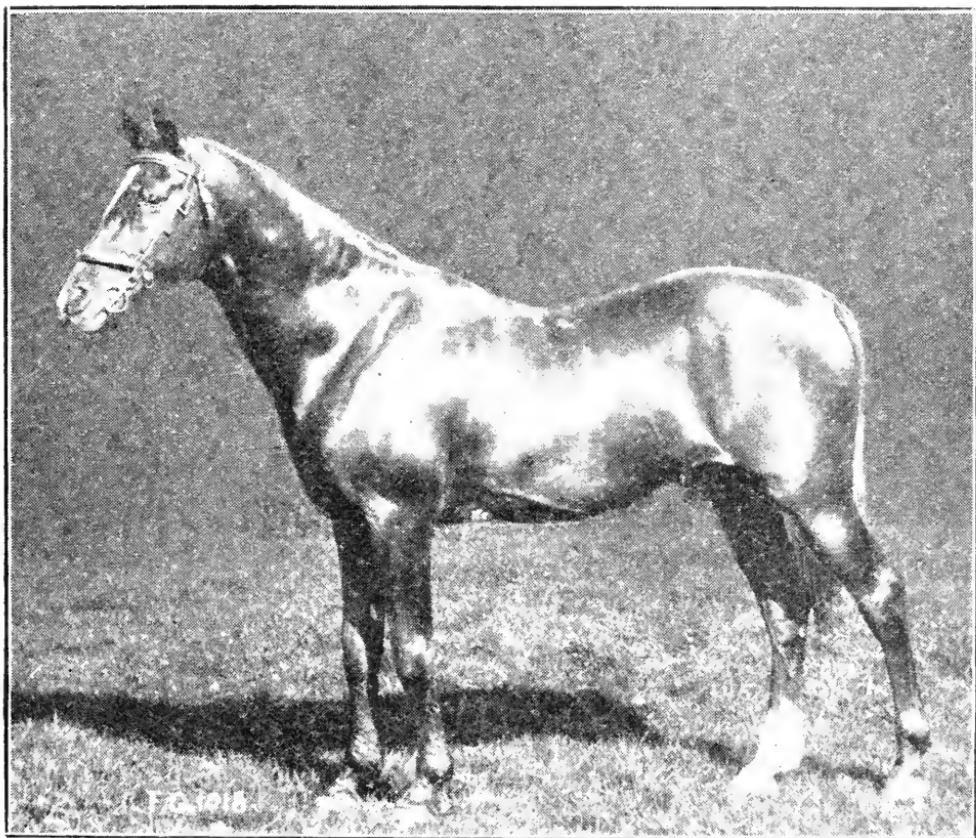
Miscellaneous Foods.—The list of miscellaneous foodstuffs, suitable for horse-feeding purposes, includes the following: Bran, mangolds, swedes, carrots, linseed cake, linseed meal, and dried brewers' grains.

Bran is a useful food for young horses, and is greatly relished by them. Bran fed to horses should be what is known as "coarse" bran: it should be quite dry when bought and in sound condition, being free from any mouldy smell. If bran is stored in a damp place, it will soon develop mouldiness, and it is then unwholesome. When mixed with hot water and given as a mash, bran acts as a laxative, and relaxes the bowels. Bran-mashes are invaluable in the stable during the winter months, when no green forage is available, as, by feeding them regularly, the bowels of the horses can be kept properly open, constipation is prevented, and the system remains in a cool condition.

Mangels, swedes, and carrots, which collectively are termed "roots," are excellent laxative foods for horses. Carrots are the most palatable, and contain considerably more nourishment than mangels or swedes. They are, however, too expensive to allow of their being fed to farm-horses. If any carrots are grown at home, it is certainly advisable to sell them if a fair figure can be obtained for them. Mangels and swedes are about equal in their merits as food for horses, though the latter usually relish a mangel better than a swede. Mangels that have been freshly raised, and which have not "ripened" in the clamp are apt to induce scouring, and, under such conditions, they must be very sparingly fed. It is not

until the beginning of January that mangels become fully matured, and lose their scouring properties; they then are a very wholesome food, both for adult and young horses.

Linseed Cake relaxes the bowels more or less, according to the amount of oil it contains. It is a useful laxative



POLO PONY STALLION, "THE BEY."

Pure Arab, foaled 1888. Winner of numerous Prizes, including First at the Royal Show 1901, and Second at the Polo Pony Show, 1904. Owner, Rev. D. B. Montefiore, Mursley, Winslow, Bucks.

(Photo by G. H. Parsons.)

food for sick or ailing horses; and by feeding three or four pounds of it a day, a horse, which is in poor condition from

some reason or other, will soon be got to lay on flesh and fat, and to improve in appearance. Being an expensive food-stuff, linseed cake should only be used in the stable as a special food.

Linseed Meal contains a great deal of oil, and in consequence acts as a laxative on the bowels. It contains a great deal more oil than linseed cake, and is an exceedingly expensive foodstuff to buy. It is very useful for feeding in small quantities to horses with coughs, as the oil in it soothes any irritation there may be in the throat. Linseed meal is also very valuable for making mashes for sick and convalescent horses.

Dried Brewers' Grains are rarely used as a horse food, but they are very suitable for this purpose. Three pounds of dried grains may be reckoned as being equivalent to two pounds of oats, and six or seven pounds of these grains can well be fed to a horse each day. The grains also are a good food for young horses, and are much relished by them. In buying dried brewers' grains, it should be seen that they are in thoroughly sound condition, and free from mouldiness, dust, and worthless adulterations. The question whether dried grains should be bought for horse-feeding purposes or not depends upon their price and the cost of carriage.



CHAPTER II.

FEEDING HORSES.

WE will now deal with the preparation of the following foods and the quantities to be fed to each horse.

Oats, as a rule, require no preparation when fed to horses, and are best given in a whole state, as the horses, provided their teeth are sound, are perfectly able to grind them properly themselves. In the case of foals and of very old horses whose teeth are defective, it is, however, necessary to crush the oats.

Maize.—Though horses will readily eat whole maize, it is advisable to subject it to some preparation before feeding it, as maize grains are rather hard. The preparation may consist either in crushing the maize, or in steeping it in water for about twelve hours prior to its being fed.

Beans, Peas, etc..—Beans are very hard, and must be given in a split state, or, instead of splitting them, they can be ground into meal. Peas should be split or steeped in water, in order to soften them. When feeding barley to horses, it is desirable either to crush the grains or to soak them in water for about twelve hours. Barley grains are rather hard, and, if fed in an unprepared condition, the horses are liable to swallow some of the grains without chewing them, which may easily give rise to digestive troubles.

Hay and Chaff.—Some of the hay given to the horses

should be cut up into chaff in the chaff-cutter. Straw is, as a rule, chaffed, though it may be fed in a long state to young horses running in straw yards. Chaffed hay and chaffed straw, or a mixture of the two, are very generally termed "chop." The flavour and palatability of "straw chop" can be very greatly improved by mixing it with sliced or pulped roots, the mixture being left lying in a heap for about twenty-four hours, when the juice of the roots will soak into the "chop," and the whole mass will develop an agreeable flavour. If it is necessary to feed hay which has turned very brown, and which is in consequence not relished by the horses, it should be cut up into "chop," and it may then either be mixed with the corn in a dry state, or it can be treated in the same way as that just recommended for "straw chop."

Green Forage Crops.—When green-soiling horses with green forage crops, these can be fed in a long state. Some farmers make a practice of cutting up the green forage in the chaff-cutter, and mixing some "straw chop" with it, but this is not necessary, as a rule, and involves unnecessary trouble and labour, though the plan is greatly to be recommended when green-soiling is first made a start with in the spring, as it helps to accustom the horses to the change from a diet of dry fodder to one of green food in a gradual manner.

Bran Mash.—The preparation of a bran mash is as follows: About three pounds of bran are placed in a bucket and sufficient boiling water poured into it to thoroughly wet all of the bran. The bucket is then covered over with a sack, and the mash is left to steam for two or three hours. Before feeding it some cold water should be added, so as to bring the mash to a lukewarm temperature, and to give it a fairly sloppy consistency. A little salt can be added, if desired. A linseed-meal-and-bran mash is prepared in the same way, the linseed-meal and bran being mixed together before the water is added.

Roots.—Mangels and swedes fed to horses should be cut into four or five pieces, or they may be prepared by putting

them through a root-cutter or pulper. Carrots are best fed in a whole condition, as if they are cut into small pieces, these latter may cause choking. All roots should be freed from any adhering dirt before they are given to the horses.



THOROUGHBRED STALLION, "ST. SIMON."

Unbeaten on the turf, and sire of winners of over £500,000 in stakes. Owner, His Grace the Duke of Portland, K.G.

(Photo by G. H. Parsons.)

Linseed Cake and Brewers' Grains.—In feeding linseed cake to horses, it should be broken up in the cake-crusher. Dried brewers' grains require no preparation.

Steaming the Food.—The practice of steaming the

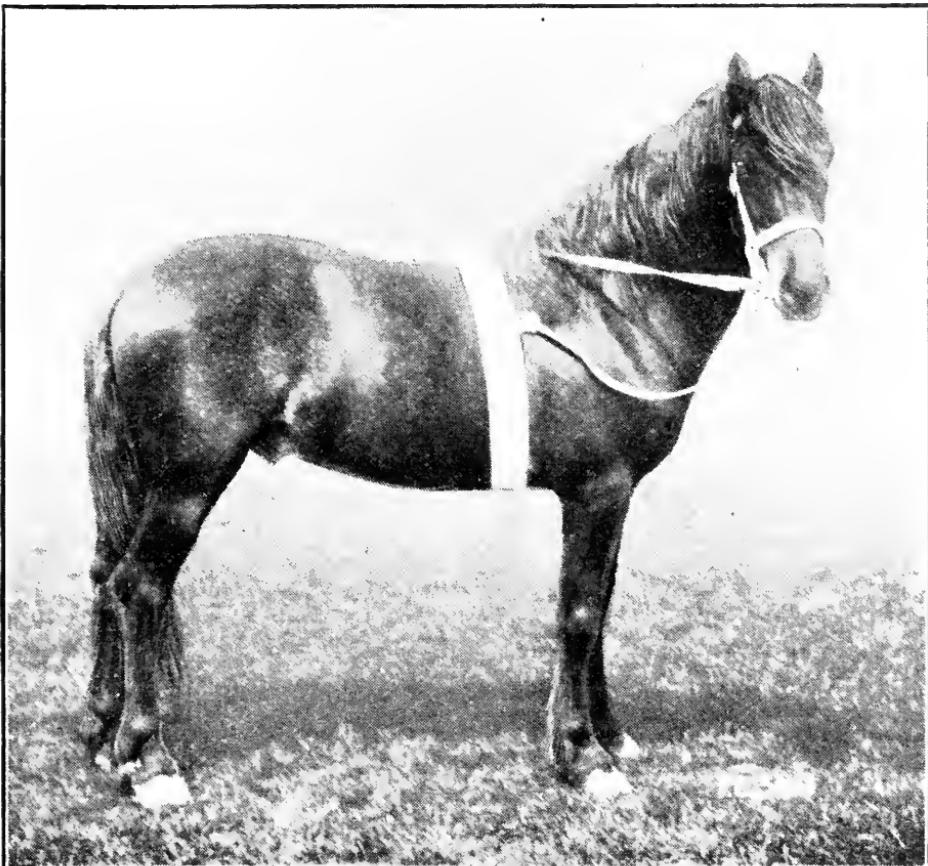
food of horses is not to be recommended, as steamed food is not particularly good for them, while the practice involves considerable expense and trouble, which are quite superfluous.

Quantities to be Fed.—The daily allowance of corn to be fed to farm-horses depends to some extent upon the amount of work they are required to do. During the spring and autumn cultivations, and in harvest time, the horses require a larger ration of corn, if they are to be kept in good condition, than they do when horse labour is slack. If the land farmed is of a heavy and stiff character, the powers of the horses in working it will be more severely taxed than is the case on light and shallow soil. In the former case, more corn must be fed than is necessary in the latter. In fixing the daily quantity of corn for the horses, some judgment should be exercised, and the amount of work they have to do and the nature of the soil farmed should be taken into consideration. It would be wrong to adhere to one fixed allowance of corn all the year round, but the ration should be increased or decreased according to circumstances. In all cases, however, sufficient corn must be given to keep the horses in good bodily condition, so that they are able to perform their work with ease and at a good pace.

Corn.—The average daily allowance of corn for a farm-horse in full work (i.e., during the busy seasons of the year) is about sixteen pounds; this will mean roughly two and three-quarter bushels of oats per week. When maize is fed, one pound of this foodstuff may be taken to be equal to one pound of oats. During the slack seasons of the year the ration of corn may be reduced to a stone per diem, or even to twelve pounds, according to the size of the horse and the amount of work the animal is called upon to do.

“**Chop.**”—No exact figure can be fixed for the daily allowance of “chop” to be given to horses. This must, to a great extent, depend upon how much long hay is provided. The more of the latter is fed, the less “chop” will be required,

and vice versa. In all cases, however, a fairly large amount of "chop" should be mixed with each feed of corn. A good rule to follow in connection with the feeding of "chop" is, that the more voracious the appetite of a horse is, the greater should be the quantity of "chop" mixed with his corn.



PONY STALLION, "LITTLE HARRY."

(Photo by G. H. Parsons.)

Hay.—The allowance of hay for full-sized team-horses during the winter months may roughly be fixed at two trusses per week, which means an allowance of sixteen pounds per diem. In the spring and summer, when green forage crops or pasture

are available, the allowance of hay should, of course, be greatly reduced, and less than a truss will then suffice as the week's allowance. It is not advisable to stop feeding hay altogether when the horses are being green-soiled, or when they are turned out to grass at nights, although some farmers do this with a view of saving the hay-stack.

Roots.—The daily allowance of roots in the winter should be about ten pounds.

Hints on Feeding.—Horses should not receive less than three meals of corn a day. The morning feed should be given as early as possible, in order to allow the horses to consume the food at their leisure, before leaving the stable for their work. The best plan consists in dividing the daily corn ration into two smaller and one larger feed, the last being fed in the evening, after the horses have completed their day's work. The evening feed may suitably be divided into two portions, the second portion not being put into the manger until the first one has been cleared up. This plan will prevent the food from getting stale by the horses continually breathing upon it, as it usually does when a large quantity of food is placed in the manger at one time.

A small amount of long hay should be put in the rack the first thing in the morning, and again at the midday meal, but at least two-thirds of the allowance of hay should be reserved for the evening, the rack being filled last thing at night; the horses will then be able to eat the hay at their leisure after finishing the evening feed of corn. Roots and bran-mashes should be given in the evening. Horses must never be given more corn or hay than they will clear up with relish. If they leave any corn in their manger, or waste the hay, the allowance should be immediately reduced, as otherwise food will be wasted, while there is also the chance of the horses surfeiting themselves, and going off their feed.

Clean Mangers Essential.—The mangers must always be kept well cleaned, being wiped with a handful of

straw or hay after every meal. From time to time they should be washed with water. Particular care must be taken to clean the mangers thoroughly after bran-mashes have been fed, as the remains of the mash, which stick to the sides and bottom of the manger, soon turn sour, and this will taint other food.

CHAPTER III.

WATERING HORSES.

THE best way of watering horses while in the stable is to keep a bucketful of water continually in the stall or box. This plan allows of the horses quenching their thirst whenever they want to do so, and greatly conduces to their comfort. The alternative plan of watering the horses at stated intervals, which is very generally followed, is not nearly so good as the former, and is not to be recommended. It matters little whether the water comes out of a well, or stream, or pond, provided it is reasonably clean, and does not contain impurities. Rain-water, if clean, is also very suitable for watering horses. It is immaterial whether the water is hard or soft, as horses will drink either with equal relish, but a sudden change from soft to hard water in the case of horses accustomed to drinking the former, may give rise to digestive troubles, and may upset them. Small stagnant ponds, in which there is much mud and dirt at the bottom, not infrequently contain the embryos (germs) of worms, and if horses drink from such, they are liable to contract worms.

Horses should always be allowed to drink as much water as they like, and the buckets in the stable should be kept continually filled. When filling up the buckets, the water still in them should first be emptied away, as water soon becomes

stable in a stable. While seeing that the horses have always got water before them while in the stable, it is especially important that they should have quenched their thirst thoroughly before going to work, and also that they get the chance of drinking immediately after their return from work.

A horse which has just drunk a large quantity of water is not in a fit state to do any fast work directly afterwards, and at least half an hour should be allowed to elapse before making the animal go at a fast pace.

When horses are making a long journey, they should be watered at intervals, whenever there is an opportunity of doing so on the road. In the summer, especial care should be taken to let horses quench their thirst occasionally while they are at work, if there is any chance of doing this.

CHAPTER IV.

GREEN FORAGE CROPS FOR HORSES.

In planning the cropping of farms and small holdings, provision should be made for growing a certain quantity of green forage for feeding to the team-horses during the spring and summer months, this being an important detail in farm-management. The careful farmer will arrange matters in such a way that a continuous supply of green forage for his horses is available from the earliest possible date in the spring until the latest possible date in the autumn. By green-soiling the horses, considerable economy is effected in the food bill, and a great saving is made in the quantity of hay consumed on the farm or holding. Reference to the forage crops which

are suitable for horse-feeding purposes has already been made on page 13. The choice must, to some extent, depend upon the nature of the soil farmed.

Rye and Trifolium.—The earliest green forage crop in the spring is rye, and a small breadth of this will come in exceedingly handy. *Trifolium* or crimson clover also furnishes a fairly early crop; this grows best on the stiffer class of soils, while rye will grow satisfactorily on light land. Crimson clover assumes a very hairy character when old, which greatly militates against its palatability; it is, therefore, very essential that it should be cut young.

Vetches or Tares come in handy after the supply of rye or trifolium has given out; they can be sown at successive intervals, and, if this is done, a continual supply of young sappy green stuff can be assured for a prolonged period. Very frequently, some oats are mixed with the tares when the crop is sown, this mixture forming very useful green forage. Not only do the oats enhance the palatability of the stuff, but they act as a support to the vetches while growing. Rye may also be sown along with vetches.

Lucerne is unquestionably one of the best green forage crops, and the great value of a patch sown with lucerne on a farm or holding cannot be over-rated, affording, as it does, a large bulk of green meat, and allowing several cuts to be taken. Lucerne, of course, does not grow on every kind of soil, and the question of soil therefore requires consideration when deciding to sow this crop. Once established, a ley of lucerne will last for a greater or less number of years.

Sainfoin is an excellent green forage crop for horses, and it, like lucerne, yields a large bulk, and will supply green meat throughout the summer. Sainfoin is particularly suited to calcareous or chalky soils, on which it flourishes vigorously. It is a splendid drought-resisting crop, and, in dry seasons, a breadth of sainfoin is invaluable.

CHAPTER V.

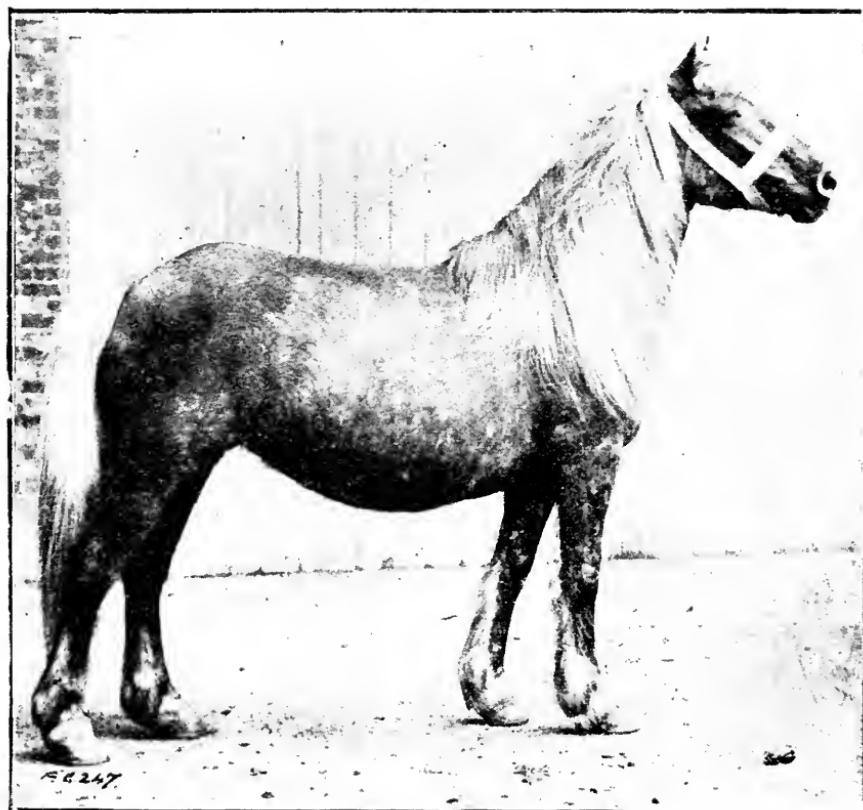
MANAGEMENT IN THE STABLE.

Bedding.—The provision of bedding for horses in the stable is necessary in order that they may rest comfortably at nights. A good and soft bed ensures a thorough and complete rest. The bedding further serves to absorb the urine, and in the winter it helps to keep the horses warm.

Straw forms the best kind of bedding, and is most generally used. Wheat straw is much superior to either oat or barley straw for littering purposes, on account of its possessing greater absorbing powers, and making a better bed. When bedding horses down with straw, it should be well shaken out either by hand or with a fork, and distributed evenly over the floor of the stall or box. It is a good plan to bank up the straw to a distance of about a foot against the stall partitions or the walls of the box. By doing this, possible injuries to the legs of horses are prevented, as they often knock their legs against the partitions or wall while lying down or in getting up.

Peat-moss Litter is very suitable for bedding purposes; it possesses much greater absorbing powers for liquid than straw, but it does not make so comfortable nor so soft a bed as the latter. If litter has to be purchased, it will often be found more economical to buy peat-moss than straw, but not in all cases. When using peat-moss litter, all lumps must be completely broken up, and thoroughly disintegrated before it is put down.

Sawdust makes a useful bedding material, and if there is a saw-mill in the neighbourhood, it will pay to make use of sawdust instead of using straw; the latter can then be sold if the farm or holding is near a town. Wood-shavings can also be used as litter; the great drawback to these, however, is that they require to be burnt before they can be utilised as manure.



PRIZE HIGHLAND PONY MARE, "FANNY."

Winner of First Prize for Mountain or Moorland Ponies at the Polo Pony Show, 1912.
Owner, Sir George Bullough.

(Photo by A. J. Bowden.)

Grooming.—All stabled horses require a certain amount of grooming if they are to be kept in health. Grooming not

only cleans the coat, and keeps it free from dirt and possible parasites, but it also keeps the pores of the skin open, and thus helps to maintain the general health of the horses in good order. One grooming a day will meet all requirements, and this may either be carried out in the evening, after the horses come in from work, or in the morning, according to which time is the most convenient. The details of grooming are as follows: The currycomb should be applied to those parts of the coat where the hair is caked or matted with dried sweat or dirt. After that, the body and legs should be well brushed with a dandy-brush, care being taken to get right down to the roots of the hairs with the brush; a superficial brushing is of no use. Finally, the coat should be brushed down with a body-brush, which will remove the scurf left after the dandy-brush has been used. After every two or three strokes with the body-brush, it should be drawn over the currycomb which is held in the other hand; this is done in order to clean the brush. The scurf in the currycomb is removed by tapping it against the floor. The mane and tail must be kept thoroughly clean, as these parts are chiefly exposed to the attacks of lice and other parasites, if neglected. The mane requires both combing and brushing every day, the dandy-brush being applied to the roots of the mane-hairs. The tail should daily be combed. Especial care must be taken to keep the "feathering" on the legs of cart and Shire horses clean. If there is a pond on the farmsteading, the horses should be made to walk through it every day, after their return from work, as this will help to clean the legs. Failing a convenient pond, the legs may be cleaned, after work, by pouring water over them with a bucket. In the winter, however, all washing and unnecessary wetting of the legs must be avoided. During this season, the legs should be cleansed by brushing them, after the mud and dirt on them has dried. When horses come in from work in a hot and perspiring state, a good rub down with wisps of straw will do them good, and add to their comfort, though it is not absolutely essential. In the spring, when the horses are shedding their winter coat, the removal of the latter should in

nowise be hastened by increased grooming, but, on the contrary, less grooming should be given, so as to avoid forcing out the hairs before they fall out of their own accord. The premature removal of the winter coat by artificial means spoils the look of the summer coat, and also increases the risk of the horses catching cold, which is always pretty great while the coat is being shed.

Clipping.—Team-horses, doing farm work, are usually not clipped in winter. Having to stand about in the open a great deal, and being exposed to all kinds of weather, they require the thick winter coat, with which nature provides them, as a protection. As their work is performed at a walking pace, a heavy coat does not interfere with their working powers. The case is, however, quite different where horses and ponies are concerned, which have to work at a faster pace than a walk. In their case, the removal of the winter coat by clipping is very advisable, as this both increases their working capacity, and tends to keep them in health. Unclipped horses sweat profusely when worked at a fast pace, and once the coat has become saturated with sweat, it takes a long time to dry. The profuse sweating has a weakening effect, and also renders the horses very liable to catch cold. The practice of clipping horses in no way increases the risk of their catching a chill, if they are covered with a rug while in the stable. A horse should be clipped from the first week in October to the beginning of November, and a second clipping will be required about the new year. Many animals will require to be clipped three times during the winter, but in no case should a horse be clipped later than the end of January, otherwise the spring coats will be spoilt. The legs are best left unclipped: to clip them exposes them needlessly to cracked heels and mud fever, while it also involves a great deal of unnecessary trouble.

Clothing.—Farm-horses do not require a rug at any season and none should be used. Horses that have been

clipped must be provided with a rug. In very cold weather, and if the stable is a cold one, two rugs may be necessary. Wool-lined jute rugs are the best kind to use; they are cheap, and last a long time. When two rugs are used, the under rug should be an ordinary fawn woollen one.

Head-stalls.—Strong leather head-stalls are the most useful; they will stand wear for many years, and in the long run, prove much more economical than hemp or web halters. The horse should be tied up with a rope or chain running through a ring, a block of wood being fastened to the end of the rope or chain.

Cleaning the Stable.—The stable must be mucked out every morning, all dung and wet litter being removed. The dry bedding, if it consists of straw, should be put in the front part of the stall, so as to leave the floor in the back part uncovered, thus allowing the latter to dry and air. The fresh straw required each day is put down in the evenings, the horses being "bedded-down" last thing at nights. When peat-moss-litter or sawdust is employed, the droppings must be removed each morning, together with the wet patches, which have soaked up the urine. A shovel is employed to remove the latter, and the holes made in the bedding must be filled up with dry material. Treated in this way, a bed made up of peat-moss or sawdust will last a month. At the end of this time, the entire bedding requires to be removed, and the floor must be washed down, and then allowed to dry and air for several hours before fresh bedding is put down.

A Word about Flies.—During the summer, efforts should be made to keep the stable as free from flies as possible. In order to keep flies away, the stable should be kept darkened during the hot hours of the day, and wire-gauze may be placed over the window-openings. By creating a draught in the stable, the flies will be induced to leave it. Dirt attracts flies, and scrupulous cleanliness in the stable, and the removal of all droppings, largely helps to keep flies away.

Strong-smelling disinfectants, such as carbolic acid or creolin are useful preventives of flies, and it is a good plan to sprinkle a five per cent. solution of either of the above on the walls and floor of the stable in hot weather.

CHAPTER VI.

WORKING CONDITION, HYGIENE, Etc.

HORSES which are worked must be in good working condition if they are to do their work in a satisfactory manner. When young horses are put to work for the first time, or when a horse is taken up from grass, after having been turned out for many weeks, they are out of condition, or "soft" and "green"; they have no strength, their muscles are soft and flabby, and, on undergoing the least exertion, they sweat profusely, and soon become blown. In such cases, they require to be got into working condition before they are up to their full work. A considerable amount of risk is involved in working a horse which is not in working condition, too hard: by over-exerting it, congestion of the lungs may be brought on, or lameness may be caused by the tendons and ligaments of the legs being strained or actually sprained. A horse which is out of condition, or "green," is got into working condition by feeding it on corn, and by gradually increasing its daily work, the work at first being very light. As the horse gains in strength, the work is proportionately increased, until finally the horse is able to do full work, without being unduly fatigued. It will be seen that working condition cannot be



SIR WALTER GILBEY'S HACKNEY STALLION, "ROYAL DANEGELT."

Winner of Special Prize for Hackney Stallions over 3 years, and Champion for the best Stallion in the Hackney Horse Show, 1902. (Photo by Bowden Bros.)

obtained all at once, but that time is required to get a horse fit when it is out of condition. Once a horse has been got into working condition, it will remain fit, so long as it is regularly worked and fed on a suitable allowance of corn.

Working Condition.—A horse that is in proper working condition carries no superfluous fat, its muscles are well developed, prominent, and hard, its coat is glossy, its eye looks bright and lively, and it performs its work in a willing manner, while it does not sweat easily, nor does its breathing become distressed when the animal is severely exerted. If a horse is actually fat, it is not in good working condition: it sweats easily, its wind is short, and the muscles do not show up prominently, the body having a flabby, sleek, and fat appearance. A fat horse can easily be got into proper working condition by working it harder, and, if necessary, decreasing its allowance of corn. As pointed out in Chapter II., the amount of corn fed to the horses should be governed by the amount of work they have to do.

Hygiene.—The chief things required to keep stabled horses in health are suitable food, sufficient water, and regular work. Errors in feeding are one of the main causes of illness in horses, while want of work or exercise also often causes ill-health. The feeding has been fully discussed in previous chapters; it is merely necessary here to emphasize the importance of providing the horses with a sufficiency of laxative food, so as to keep the bowels in good order, and to avoid constipation. The state of the dung is an excellent index to the condition of the bowels. If it be hard, very dry, and closely balled into small dark-coloured pellets, the bowels are constipated. In that case, more laxative food must be given, in order to relieve the constipation. When the bowels are in the condition in which they should normally be, the dung is well, but not closely balled into pretty large pellets, while it is fairly moist, and of a healthy colour, being neither very dark nor very light, and any disagreeable smell is entirely

absent, excepting when maize is fed. In the latter case, there is a peculiar and unpleasant smell about the dung.

Regular Work Essential.—As regards work, it is essential to the health of stabled horses that this should be regular. If there is not sufficient work for the horses, they must be given exercise, or they can be turned out to grass, but in no case should healthy horses be allowed to stand idly in the stable for longer than a day or two. When the work or exercise of horses is reduced, their allowance of corn should also be decreased. Horses that are turned out to grass require no special exercise, as they will take as much as is necessary for them of their own accord.

Regularly worked horses should be given one complete day's rest in every seven.

Chills and Colds caught by stabled horses are frequent causes of illness, and these must specially be guarded against. Horses should never stand in a draught in the stable, especially so when they come in warm from work. Insufficient bedding oftentimes causes a chill, and damp bedding frequently is responsible for the same complaint.

Physicking Horses.—The practice of balling horses, or of giving them nostrums promiscuously, must be strictly avoided, and they should only receive medicine when an animal is really ill. Spices and condimental preparations are not to be recommended by any means. A little linseed meal, or locust bean meal, may be added to the food if a relish is required.

Salt of Importance.—Salt, however, must be provided for all horses, as it is necessary to their well-being. It is best provided in the shape of a lump of rock salt put in the manger, and horses ought to have access to it at all times when in the stable, or when turned out to grass.

Nose bags.—Nose-bags are exceedingly useful articles in the stable, and they should be found on every farm and

small holding. Supposing team-horses are not brought back to the stable at their regular meal time, they should be fed out in the open from a nose-bag. When a horse or pony is driven on a long journey to market, or when a waggon is sent to a distant station to fetch coke, or to deliver corn, etc., nose-bags must not be forgotten, so that the horses may be baited when their regular feeding-time arrives. Only a small quantity of chaff should be mixed with the feed of corn put in the nose-bag, so that the horses are able to clear up the food in a reasonable space of time.

Sunstroke.—During very hot weather in the summer season, special care should be taken to prevent the heat affecting the horses in an injurious manner, and to avoid risks of sunstroke. Under these conditions the horses must be kept in the shade as much as possible, and any unnecessary exposure to the sunshine during the hot hours of the day must be avoided. While horses are kept standing about in the open, during the course of their work, it is easy to let them stand in a shaded place. Care must be taken not to overwork or over-fatigue a horse in hot weather, as over-exertion or much fatigue are great causes of sunstroke. As soon as an animal shows signs of being affected by the heat, which fact is evidenced by its breathing becoming abnormally quick and short, or by its standing or moving in a listless manner, and by exhibiting signs of distress generally, it must immediately be taken off its work, and brought into the stable, or taken to a shaded and cool place. It must be offered some water, and requires rest for the remainder of the day. It is very necessary to offer horses water at frequent intervals in hot weather, while it is a good plan to add some oatmeal gruel to the drinking water, as this not only refreshes, but also strengthens the horses.



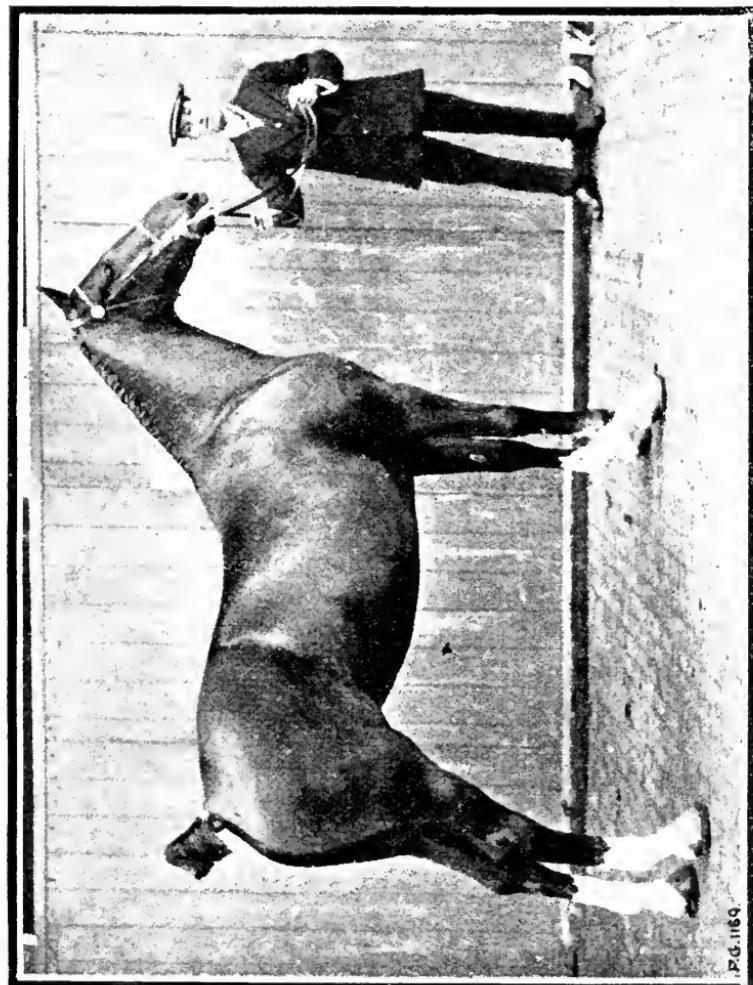
CHAPTER VII.

STABLES.

THE three most essential requisites in a well-built stable are that it should be dry, airy, and warm. In order to secure dryness, the site on which a stable is built should be dry, and, if necessary, properly drained. It is desirable that the site should possess a light, porous subsoil, of a sandy or gravelly character, which is drained by natural means. A clay subsoil is not good, but, if there is no other choice, the site must be properly drained by means of drain-pipes before the stable is erected. Damp stables are extremely unhealthy, and give rise to much illness, especially in the winter.

Ventilation.—In regard to the stable being airy, this is attained by providing suitable ventilation and sufficient cubic air space. Door and windows are the chief means of ventilation; in addition, small air-holes should be provided in the wall on two adjacent sides, just underneath the eaves of the roof or the ceiling. The window openings must be large, and it is better to be too lavish than too economical with window space. Ample window space not only ensures plenty of fresh air, but it also makes the stable light. It is essential that plenty of light should come into the stable: dark stables are unhealthy and stuffy. The windows must be so constructed that they can be widely opened, while it is a good plan to make them completely removable. This will admit of their being replaced by frames covered with gauze in the summer.

The Stable Door is best made in two separate halves, a top and a bottom half, which open independently of one



CHAMPION HACKNEY MARE, "ADBOLTON ST. MARY."

"Champion Mare at the London Hackney Show, 1910. Exhibitor and breeder: A. W. Hickling, Esq., Adbolton, Nottingham. Sire: "St. Thomas," Dam: "Nelly Horsley," Age: 4 years."

(Photo: Sport and General.)

another. All stable doors should either open outwards, or they should be sliding doors, but they must not open inwards.

Warmth of Stable.—This is obtained by having the stable well built, by not making it too large, by erecting it in a sheltered position, by providing a dry site, and by its facing either to the south, or west, or south-west.

Dimensions.—The following are the various dimensions required in preparing the plans for a stable: For a full-sized horse, the width of a stall should be at least six feet, but it would be better to have it six and a-half feet. The length of the stall, measured from the wall in front to the gutter behind latter, requires to be not less than eleven feet four inches, and it may with advantage be twelve feet. The width of the manger should be from two feet to two feet three inches, and the manger is usually fixed at a height of three feet from the ground. The stall partitions (the technical name for stall partition is "travis") must not be less than five feet high. The minimum size for a comfortable loose-box is nine feet by eleven feet, or ten feet by ten feet. In the case of ponies under fourteen hands in height, the stall need not be more than five feet four inches wide, and ten feet in length, while the manger should be fixed at a distance of only two feet six inches from the ground.

Eight feet is a good height for the doorway in a stable, and the width should be from five and a-half to six feet. If the stable has no ceiling, the height to the eaves should be ten feet, or it may be more. If there is a loft over the stable, and the latter consequently has a ceiling, the height should not be less than eleven feet.

When more than two horses are stabled together, the cubic air space allowed for each horse ought not to be less than 1,200 cubic feet. In a two-horse stable, the amount of cubic air space required is at least 2,800 cubic feet, and the cubic air space in a one-horse stable ought not to be less than 1,500 cubic feet.

The average width of the passage behind the stalls in the

stable is five and a-half feet, but five feet will suffice, if the length of the stalls is as recommended above. There should be a shallow gutter behind the stalls, for which a width of from six to nine inches should be allowed.

Mangers and Racks.—Cast-iron mangers, which are enamelled inside, are greatly to be preferred to wooden ones, as the former are practically indestructible, and also more cleanly than the latter. If wooden mangers are fitted, their depth should be about nine or ten inches. Hay-racks ought not to be placed above the manger, but on a level with it, they being fixed either alongside the manger, or in the right-hand corner of the stall. Racks made of cast-iron are much superior to those made of wood.

Floor of a Stable.—This should be raised some inches above the level of the surrounding ground, in order to ensure dryness. Before flooring the stable, the soil must be excavated to a depth of from six to nine inches. The first-named depth is sufficient when the soil is light, but if the soil is clay, then the site requires to be excavated to a depth of nine inches. The excavation should be filled with rubble and broken bricks, this being done in order to have a porous layer underneath the floor. The floor itself must be thoroughly waterproof, so that there is no chance of the urine draining through the floor into the soil beneath; if this happens, the stable soon becomes unhealthy, and the air in it is always impure. Bricks are pretty frequently used for flooring the stables on farms, as they are comparatively cheap. The great drawback to the ordinary brick as flooring material is that it absorbs wet, and is more or less porous. Blue stable bricks are much superior to ordinary bricks, and the same applies to clinkers; both make an excellent floor. In addition to the materials named, concrete is very suitable for floors: in order to prevent the horses from slipping, it should be grooved in a longitudinal direction in the stalls. Bricks and clinkers must be set in cement, the interstices also being carefully filled with cement.

Drainage.—In order to ensure proper drainage in stalls and boxes, the floor in them should have a fall of 1 in 50, the fall being towards the gutter at the back of the stall or box. It is not admissible to increase the fall beyond the ratio indicated, as perceptibly sloping floors are uncomfortable and injurious to the horses.

For the purpose of draining a stable, surface drainage is by far the best, and for the following reasons: It is the most cleanly, the simplest, and the most hygienic. Underground drainage is bad, and should be avoided. In surface drainage, the only thing required is a gutter behind the stalls, which should have a fall of 1 in 50 towards one end of the stable. This gutter should communicate with the outside by means of a hole through the wall. In order to drain a loose-box satisfactorily, the floor should have a fall of 1 in 50, as recommended above, and a shallow gutter should run along the back of the box, this gutter being connected with the main gutter in the stable. The gutters are easily kept clean by sweeping them every morning, and by flushing them with water from time to time.

Harness Room.—It is a great advantage to have a separate compartment in which to place the corn bin, and which will serve as a harness-room. This compartment should be adjacent to the stable, and it should communicate with the latter by means of a door. It will answer all requirements perfectly if the partition between the stable and harness-room is made of boards, a brick wall being superfluous.



CHAPTER VIII.

SHOEING AND CARE OF THE FEET.

TEAM-HORSES which are not required to do much travelling on hard roads should be shod every five or six weeks. Horses and cobs that perform their work on the road require to be shod at least once a month. It not infrequently happens that horses doing road work wear out their shoes at a very rapid rate, and that their shoes do not last out a month. In such cases, it is, of course, necessary to send the horse to the forge as soon as the shoes are worn away. The horse-owner should always be careful to examine the state of the shoes of his horses from time to time, and he should also observe whether a shoe has become loosened before taking or sending horses for a long journey on the road. In order to ascertain whether a shoe has become loosened, it should be tried whether it will move about from side to side on the hoof, and not—as is usually done—whether it moves up and down. When a horses is travelling on a hard road, it is easy to know when a shoe is loose on account of the peculiar sound made each time the foot is placed on the ground.

The Horn of the Hoofs in young horses grows at a more rapid rate than is the case with horses six years old and over, and, for this reason, the former require to be shod at more frequent intervals than the latter, in order to avoid the feet becoming over-grown and losing their good shape.

The Shoes should not be made unnecessarily heavy, as very heavy shoes fatigue the legs of horses in an undue manner. The shoes should only be made sufficiently thick to

make them last a reasonable time. Calkins on the shoes are bad, and should always be avoided.

In the case of young horses of the light class, the toe-clips on the hind shoes are best dispensed with for the first two or three times the animal is shod. The toe of the hind shoe may with advantage be slightly fore-shortened, and the shoe must be provided with side-clips, to take the place of the toe-clips. This plan of shoeing is recommended, in order to avoid injuries to the coronets of the fore-legs from "cutting" and "over-reaching." Young horses are rather awkward in their gait when first put into harness or ridden, and they are apt to hit the fore legs with the toes of the hind shoes.

The shoes should always be made sufficiently large to fit the foot comfortably, and it is a very bad plan to use small shoes, as many farriers do, and then to rasp away the horn of the wall, in order to make the latter flush with the shoe. In the case of horses and cobs, which are worked at fast paces, it is necessary that the heels of the fore-shoes should not protrude beyond the heels of the foot: the heels of the shoes must be flush with the rear outline of the feet, this being required in order to prevent the fore-shoes from being accidentally pulled off by a hind foot. It is also objectionable to have the heels of the shoes longer than is necessary in the case of team-horses, because if this is done, it will tire the horses to pull the feet out of the ground when working on soft and sticky soil.

When the hoofs are being prepared by the farrier, prior to the shoes being applied, the sole and frog of the foot must not be pared in any way, nor should the outside wall be rasped after the shoe has been nailed on. The frog of the foot ought to come into contact with the ground as much as possible. The larger and more prominent the frog is, the better: if the frog is pared by the farrier, it is sure to shrivel up in time, and thrush will most probably make its appearance.

Care of Feet.—The chief point in the care of the feet of horses is to shoe them properly and regularly. The hoofs should never be allowed to become overgrown by the shoes

being left on too long. There is no necessity to apply any fat or oil to the hoofs, as nothing is to be gained by doing so. After the horses come in from work, the soles of their feet should be looked at, in order to see if any stones have lodged in the sole. Every time a horse is shod, some Stockholm tar ought to be applied to the cleft of the frog, in order to prevent the appearance of thrush. The supply of dry bedding is an important point in the care of the feet, as wet and dirty litter is a great cause of thrush. In hot weather, the application of cold water to the feet is of great benefit, this serving to cool them.

When horses are turned out to grass, their shoes must all be removed, unless they are turned out only for a week or two. It greatly benefits the feet if the horse goes barefooted when running at grass. Besides removing the shoes when an animal is about to be turned out, the heels of the hoofs should be well pared down, in order to let the frog come properly into contact with the ground, while the rasp should be run round the edge where the sole and wall meet, so as to remove the sharpness, and thus to prevent the wall from splitting, as it is apt to do when a horse goes unshod, and when the precaution of rasping the edge, in order to make it blunt, is not taken.



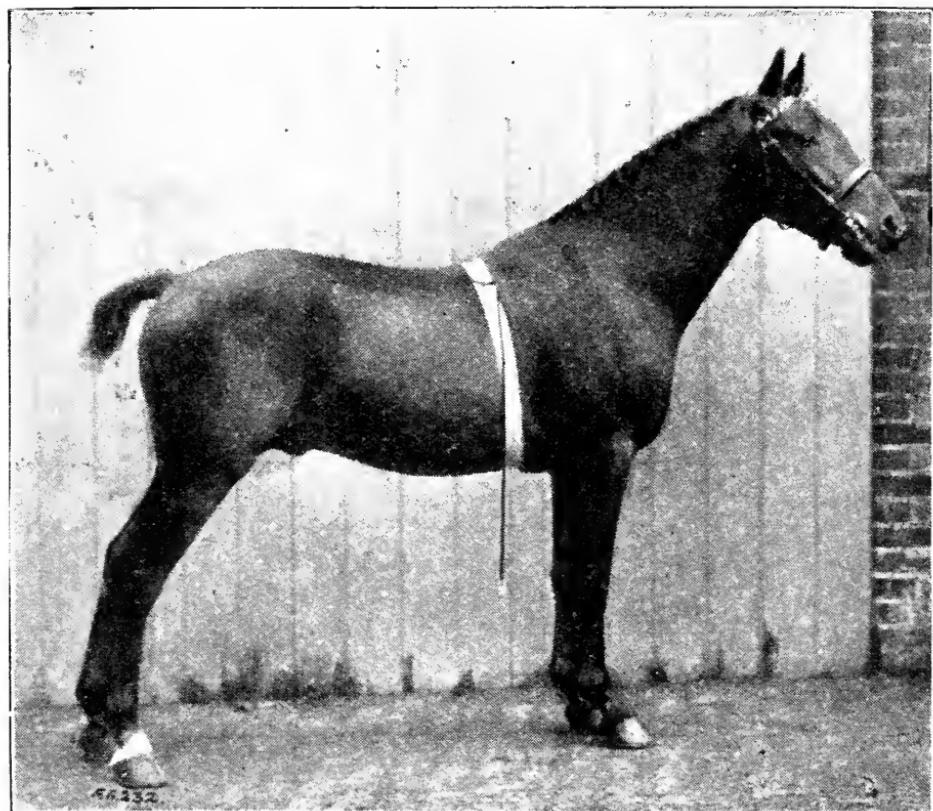
CHAPTER IX.

CARE OF NAGS, COBS, AND PONIES.

THE feeding and general management of nag-horses, cobs, and ponies has been treated of, to a large extent in the preceding chapters, but there are various points in regard to the management of these classes of horses which require separate discussion. As nags, cobs, and ponies are required to do a great deal of trotting in the course of their work, it is necessary that great care should be bestowed on keeping them in fit condition for fast work.

Feeding Nags and Cobs.—They must receive an ample allowance of corn, while the feeding of an excess of bulky foods, such as hay, and chop, and green forage, must be avoided. If a horse consumes very large quantities of the foodstuffs named, the belly becomes distended to such an extent that the animal's wind is adversely affected, and, in that case, it will not be fit for continued fast work, on account of shortness of wind. There is, as a rule, no risk of a horse or pony consuming more hay than it ought to, in order to keep fit for fast work, if a proper allowance of corn is fed. There are, however, some gross and greedy feeders which will gorge themselves with hay to an injurious extent, if they have the opportunity of doing so. In their case, care must be taken to limit the allowance of hay very strictly to a reasonable limit. Nags, cobs, and ponies should not be given as large an allowance of chop as is given to team-horses. The allowance of green forage fed to them must be restricted to a small quantity, but it is very advisable to give some green food every day when it is available. It will also

be of benefit to nags and ponies if they are turned out in a paddock or field for a couple of hours every day in the summer season. Ponies which are not required to go at a faster pace than a slow jog-trot, and which are not severely worked, may be kept turned



HACKNEY PONY, SIR GILBERT GREENALL'S "TISSINGTON HORACE."

Winner of First Prize in the class for Pony Stallions two to three years old,
at the Hackney Horse Show, 1902.

(Photo by Bowden Bros.)

out all day, merely being brought into the stable for their meals: this plan will serve to keep them in sufficiently good working condition for the work they are called upon to perform. In cases where ponies are thus kept turned out all

day, and do a good deal of grazing, they require only a very small quantity of hay, but they must, of course, receive a sufficient ration of corn.

Working Horses or a Full Stomach.—Horses should not be required to do fast work on a full stomach; at least three-quarters of an hour should be allowed to elapse after the animal has eaten a meal, before letting it do work at a trot. Similarly, it is bad to trot a horse for any distance immediately after it has drunk a large quantity of water, as this will most probably cause scouring.

Watering Horses While Warm.—It does no harm to let a horse drink a small amount of water just before or during fast work, nor does it hurt a horse to drink cold water when in a heated state; on the contrary, it greatly benefits and refreshes the animal to drink a draught of water when hot and tired.

Continuous Fast Work is very wearing to the legs of horses, and a complete rest from time to time, given by turning the animal out to grass, is of much benefit, and is greatly to be recommended, as it serves to prolong the usefulness of the horse. How often a rest should be given depends upon circumstances. If a horse is worked very hard, and its legs suffer a great deal of wear in consequence, a rest of about four weeks once a year is advisable. Lightly worked horses will not require a rest more often than once in every two years, while cobs and ponies which are turned out daily when in work, do not really require a complete rest at all. Though the period of four weeks has been named, that does not mean to say that a longer rest is unnecessary: on the contrary, the longer the rest, the better for a horse. When turning out a horse, in order to give it a rest, a low-lying, spongy pasture should be selected, if possible, as nothing benefits worn legs more than when the animal is turned out on soft soil.

Grooming Nag-Horses.—Nag-horses require to be

more thoroughly groomed than team-horses. Unless the coat is kept clean, and the pores of the skin open, horses are not in a fit condition for performing fast work with ease and comfort. The provision of a rug for nag-horses is an optional matter; there is no real necessity for doing so, excepting when they have been clipped. When a horse is brought into the stable in a heated state, after fast work, it is advisable to rub it down with wisps of straw, after which it may be left to cool down of its own accord, great care being taken, however, to see that it does not stand in a draught.

Nag-Horses on the Road.—In regard to the management of nag-horses, when on the road, the following details should be mentioned. A horse should never be asked to trot up or down a hill. In going down a hill the horse has quite enough to do to hold back the trap or cart, without its work being needlessly increased by making it proceed at a trot. A horse between shafts is most liable to stumble when going down hill, hence the driver must be particularly careful when driving down an incline. Whether it be loaded or not, it should always be seen that the trap or cart is properly balanced; a great deal of needless and severe exertion is caused by the vehicle not being balanced. When a horse is driven on journeys longer than, say, four miles, its powers must be husbanded by the driver during the early stages of the journey. Drivers very commonly make the mistake of sending a fresh animal along at too rapid a rate at first, the result being that it soon gets tired, and slows down considerably, after travelling a short distance; during the rest of the journey the animal is in a fatigued condition, and not up to its work. The proper way to drive a horse is to make it go along at a steady pace, and the driver should always be careful not to let the pace get any faster than the horse can conveniently manage, without losing its wind or becoming distressed.

Management of Ponies.—Ponies naturally require less food than full-sized horses, on account of their smaller size.

It is a pretty generally accepted axiom that a thirteen-hand pony requires half the amount of corn, hay, and chop fed to a full-size nag-horse. In practice, however, it will be found that a pony should be fed on a more liberal scale than this, if it is to be kept in good condition. The daily allowance of oats may be anything from five pounds to eight pounds, according to the amount of work the pony is called upon to perform.

Ponies are, as a rule, more frugal in their requirements as regards food than horses, while they are also hardier and more robust. They need less attention than a horse, but this does not mean that they should be neglected in any way. A pony rarely suffers from roaring or whistling, complaints which are of common occurrence in horses.

CHAPTER X.

HORSES FOR SMALL HOLDINGS.

General Conformation.—The principal requirements in a farm horse of good quality are as follows: The animal should be strongly and compactly built, and possess depth and breadth of body. Its back should be short and broad; the loins require to be broad and strong, and the body must be well-coupled. Viewed from in front, the chest or breast should be wide and very muscular, and there should be a good bit of space between the fore-legs. The ribs require to be lengthy and "well-sprung," so as to give ample chest capacity. The hinder ribs must extend well backwards, and the underline of the barrel or trunk should be as straight as possible from the point of the elbow to the stifle. The

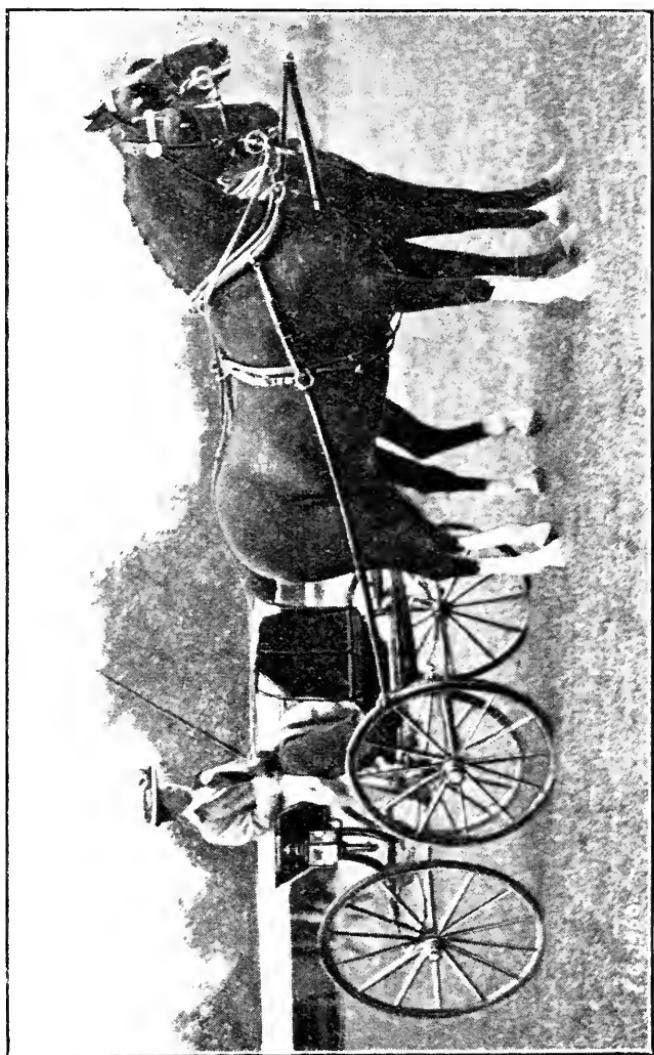
neck must be very broad and of short or medium length. The limbs require to be squarely placed under the body, and should be very stout. The fore-arms, the thighs, and the gaskins cannot be too muscular. The hocks should be broad and large in shape, whilst the cannons, both in front and behind, require to be short. The feet must be fairly large, of good shape, and wide and open at the heels.

Temperament.—As regards disposition, farm horses should be active and willing to work, but withal gentle and placid. As their work is always performed at a walking pace, it is of great importance that they should possess good walking action: their walk must be free and quick and long-striding.

Faults to Avoid.—In selecting a farm or team-horse, the following faults must be avoided: a long or narrow back, weak loins, a loosely-coupled body, a narrow breast, want of muscle at the breast, a flat chest, a narrow barrel, a tucked-up belly, a long neck, want of breadth and thickness of neck, badly placed legs, thin limbs, too lengthly limbs, want of muscle in the fore-arms, or thighs, or gaskins, small and narrow hocks, very straight hocks, sickle-hocks,* very long cannon-bones, either in front or behind, and small or badly-shaped feet. In addition to the faults of shape enumerated, a sulky temper, lazy disposition, want of activeness when at work, and a slow and cramped walking action greatly decrease the value of a horse intended for farm work.

Strength and Power.—The strength and power of a draught horse is dependent upon its size, weight, and muscular development. A big horse possesses greater powers of draught than a small one, and the weightier a horse is the more weight can it throw into the collar, and the greater will be its powers of draught. On the other hand, a very big and heavy horse is less active and slower than a smaller

* The term sickle-hock denotes a hock which is very much bent at the joint.



A SMART TURN-OUT.

Winners of the first prize in the Double Harness Class at the Bath Horse Show, 1906.
(Photo: Bowden Bros.)

animal, as a general rule. In a good farm horse, a combination of sufficient powers of draught, with activeness and energetic and quick walking action, is essential in all cases, but horses used for farm work may vary to a considerable extent in regard to their size and weight.

Horses for Farm Work.—In selecting horses for work on farms or small holdings, the nature of the soil and the conformation of the country should be taken into account to a certain extent. A stiff and heavy clay soil requires considerably greater powers of draught in the horses employed in tilling it than a light and shallow soil. Consequently, in the case of the former kind of soil, it is necessary that the horses selected should be heavy and powerful, and size and weight are the chief consideration. For light classes of soils, such as sandy loams and chalky lands, a lighter stamp of draught horse is the most suitable, and it is undesirable that the horses should be very big and weighty, the chief essential in the case being activeness. The more active farm horses are the better, because the more quickly will they get over the ground, but at the same time, the desire to employ active and quick-stepping horses must not lead a person to select animals that lack sufficient weight and power, and are too light for the soil they are required to till. To put the matter briefly, it may be stated that "Heavy land requires heavy draught horses, medium land requires medium draught horses, and light land requires light draught horses." It is a bad and uneconomical plan to employ horses that are bigger and weightier than the nature of the soil tilled actually requires, because the bigger and heavier a horse is, the more food does it consume, and the more does it cost to keep.

Horses for Hilly and Flat Districts.—As regards the conformation of the country in reference to the selection of horses for farm work, a somewhat lighter and more active stamp of horse should be selected for a hilly country than for a flat or undulating country. In tilling soil in hilly districts, the horses must possess a considerable degree of agility, in

order to enable them to perform their work in the most satisfactory manner. Very heavy and weighty draught horses are out of place on farms and small holdings which are hilly.

Breeds.—The Shire represents the heaviest type of farm horse, but it must be remembered that Shire horses are not all alike as regards weight and size. Some Shires are considerably bigger and heavier than others, hence there is much scope for the selection of a suitable team-horse among pure-bred Shires. In Suffolk, the Suffolk horse is much used as team-horse on farms, and it is exceedingly suitable for this purpose. Anyone farming in Suffolk may with advantage select Suffolks as team-horses. The Suffolk also represents a heavy stamp of farm horse, though not quite so heavy and weighty as the heaviest type of Shire. In Scotland, the Clydesdale breed furnishes a heavy stamp of farm horse; Clydesdales are also, to a certain extent, used as team-horses on farms in the North of England. Only the minority of farm horses are pure-bred Shires; by far the larger proportion are part-bred Shires, which contain several crosses of Shire blood. Such part-bred Shires, or “Shire-bred” horses, possess the characteristics of the pure-bred Shire to a greater or less extent, and they resemble the latter pretty closely in general appearance. The part-bred Shire horses are excellent for farm work, and, speaking in a general way, they may be said to be the most suitable kind of agricultural horse. Part-bred Shires, of course, vary very greatly in regard to weight and size, and their ranks, therefore, afford plenty of choice, and furnish farm horses suitable for every class of soil and for all districts.

The Team-Horses which are used for tillage purposes on farms and small holdings, will also perform all the carting on the road that crops up in the course of the year. Such carting work consists in delivering the produce at the corn-factors' or at the station, and in fetching artificial foodstuffs, brewers' grains, etc., from the neighbouring town or station.

Light Draught Horses.—Besides the team-horse, or farm horse proper, a lighter and clean-legged class of horse will oftentimes be found useful on farms and small holdings. A heavy farm horse is not suitable for doing any carting work at a trotting pace, and this kind of work requires a smaller, lighter, and much more active animal. On small holdings, where there is a great deal of road work, and only a small amount of tillage work to be done, light and clean-legged horses belonging to the class of horses known as "light draught horses," may be of greater use than farm horses proper. Of course, a light draught horse is not nearly so well suited to perform tillage work as an animal of the real farm-horse stamp, but, on light and shallow soil, the former may answer all requirements in regard to tillage work in a sufficiently satisfactory manner. This question is one which cannot be definitely answered one way or the other in a general way: it can only be satisfactorily settled by the man on the spot, and when the circumstances of each particular case are known. In selecting a light and clean-legged draught horse, selection should be carried out on the lines laid down above, in the case of farm horses proper. The various faults of shape, temper, and disposition enumerated above, should also be avoided in a clean-legged draught horse. In addition to good and free-striding walking action, it is essential that the latter should possess good trotting action. In trotting, the feet should be moved along clear of the ground, so as to prevent the risk of stumbling, and the animal must not brush, either in front or behind.

Discarded 'Bus Horses of a heavy stamp will often be found to be very useful for all-round purposes on small holdings, and as odd horses on farms. As 'bus horses are not, as a rule, accustomed to go between the shafts, some care must at first be exercised when they are put into a cart. Van horses which are sold out of the studs of carriers and other firms in towns, are very frequently suited to the requirements of the small farmer. Either of the classes of horses just mentioned can be bought comparatively cheaply at auction sales,

which are usually advertised in local papers and on placards in market towns. The numerous auction sales of bus and van horses which are held in London, and which afford great opportunities of buying suitable horses at reasonable figures, are generally advertised in the "Daily Telegraph."



A TRUE TYPE OF HACKNEY STALLION'S HEAD.

Showing the masculine character which denotes an impressive sire.
(Photo by G. H. Parsons.)

Where to Buy Farm Horses.—Sales of the studs of contractors in town also enable a farmer to buy useful team-horses comparatively cheaply: such sales are usually well advertised. One of the best opportunities of buying farm

horses occurs at the sales held on farms, when a tenancy is given up. These farm sales generally take place at Michaelmas, but they are also held about Lady Day. Auction sales of agricultural horses are also held from time to time at the large horse repositories in provincial towns, which sales are advertised in some of the leading agricultural journals. Finally, the intending buyer of farm horses or light draught horses has ample opportunity of buying privately. On the whole, horses can be bought comparatively cheaper at a public sale than privately, though it is not an uncommon occurrence for the bidding at a sale to be so lively that the price paid for a horse at auction may be dear.

The Cost of Farm Horses varies a great deal, according to their quality and age. A young horse, in its prime, naturally is worth more than an older animal. If a horse possesses any unsoundness, its market value will be decreased considerably thereby, even though the unsoundness may not actually interfere with its working capacity. A heavy, big, and powerful farm horse is worth more than a smaller and less weighty animal. The heavier and more powerful a horse is, the greater is its value. The price may range from £20 to £40, while unsound, inferior light draught horses suitable for farm work can be picked up at prices under £20.

Age when a Horse is in its Prime.—A farm horse is in its prime from five to nine years old, but it will remain serviceable for many years longer, after passing its prime. The length of service of the horses depends, to a considerable extent, upon the treatment they receive.



CHAPTER XI.

SHIRE HORSES.

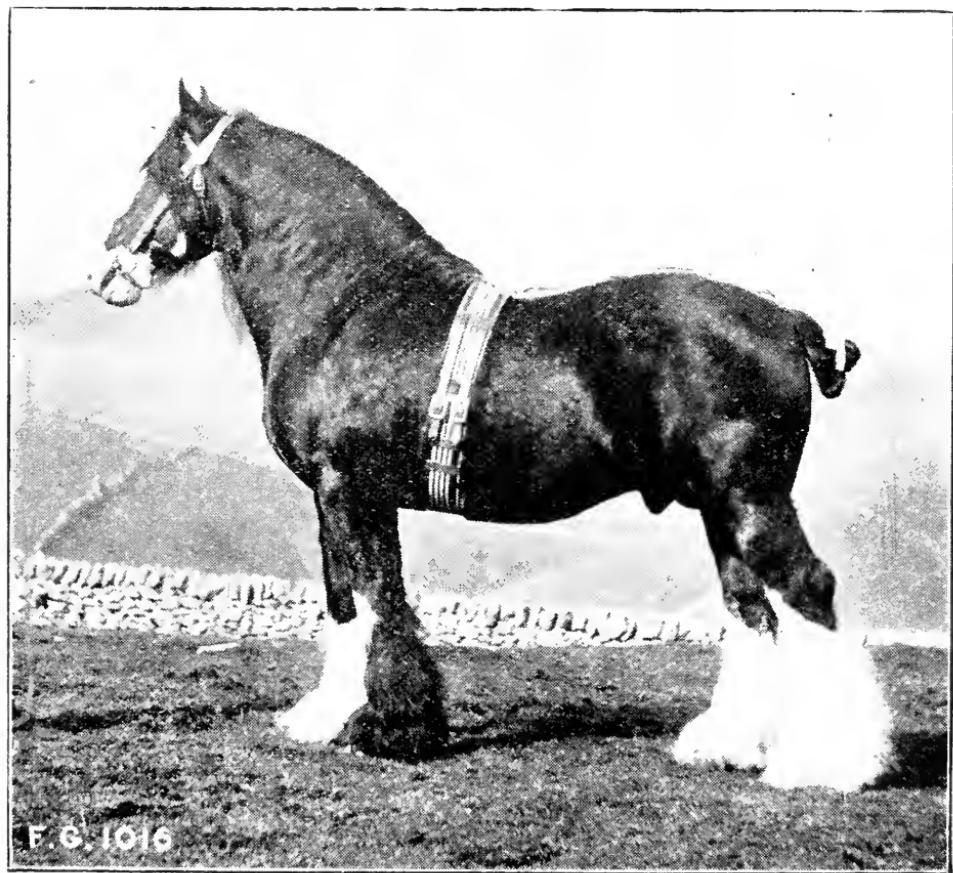
SHIRE horses are the principal English breed of heavy draught horses. The breed is well known in all parts of England, and possesses a great deal of popularity among farmers. It furnishes the majority of the heavy draught horses used in towns, and there is a great and constant demand for heavy geldings of this breed for town work.

The Principal Features of the Shire Breed are its size, weight, and strength, which qualities all combine to give it great powers of draught. The colours of Shires are bay and brown, while black and grey are also met with, but these last two colours are not popular, and breeders of Shires should go for brown or bay. White markings usually occur on some of the legs, and are considered desirable.

The "feathering" on the legs is a prominent feature of the Shire, this point receiving great attention from breeders. The feathering should be as profuse as possible, but it must be of a silky and soft texture. Coarse and hard feathering is considered a defect. From a practical point of view, the amount of feathering on the legs of a Shire horse is of no importance, and it matters little whether it is scanty or profuse. But when pedigree Shires are bred with a view of showing or selling them for breeding purposes, great stress should be laid on getting the feathering as profuse and long as possible, as plenty of feathering adds to the animal's market value when intended for showing or breeding.

The Head of a Typical Shire Horse is long, the face, when looking at it in profile, being arched outwards or

"roman-nosed." This last point is a distinctive feature of the breed, and a well-bred Shire must possess it. The feet should be comparatively large in size, with wide and open heels. The pasterns are, as a rule, rather short. It is essential that a Shire horse should be a good walker, the walking action being free and active and long striding.



SHIRE STALLION, "BURY VICTOR CHIEF."

A famous Prize winner at all the leading shows. Sire of many well-known Prize winners.
Owner, J. Wainwright, Esq., Buxton, Derbyshire.

(Photo by G. H. Parsons.)

The Size of Shires varies considerably, this depending, to some extent, upon the kind of land upon which the

animal is bred and reared, and also upon the way in which it is fed during colthood. The bigger and weightier a Shire is the more valuable is it in the market. The average height of good Shire horses, when fully grown, is from 16·3 to 17 hands. Stallions are oftentimes bigger than 17 hands.

The Weight of Shires, like their size, varies in different specimens. The breeder should aim at breeding his Shires as weighty as possible, because weight means money. A small and comparatively light Shire horse is not nearly so valuable as a big and weighty one. For farm work, however, the smaller Shire horses do better, and are more suitable than very big and heavy animals. Though it is desirable that Shire horses, when they are bred for sale, should possess as much weight and size as possible, they must not be coarse. A certain amount of "quality" is essential in a Shire, especially if the animal in question is intended for breeding purposes. Coarseness is a defect. Generally, it will be found that very big and weighty Shires are much more inclined to be coarse in build than smaller-sized animals. It is always more or less difficult to combine quality and size and weight, not only in a Shire but in other kinds of horses. By increasing the size and weight in Shires, "quality" is apt to suffer, and vice versa, in breeding for a great deal of quality, a decrease in the size and weight is very liable to occur. The breeder of Shires will, therefore, find considerable scope for his skill in breeding in trying to produce typical animals that combine plenty of weight and size, or "bigness," with a sufficient amount of quality.

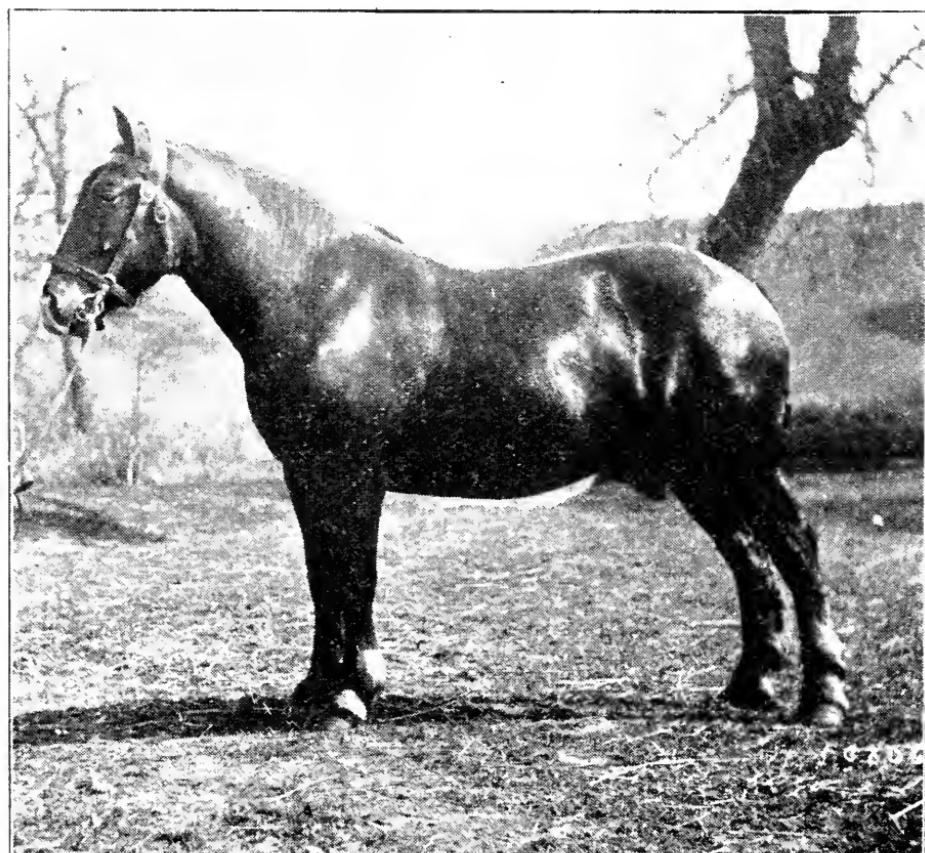


CHAPTER XII.

SUFFOLKS AND CLYDESDALES.

The Suffolks, like the Shires, are a heavy draught horse breed. They are descendants of the old-time famous Suffolk Punches. Suffolks are smaller and less weighty than Shires: they are neither so big-boned nor so massively built as the latter. The height of Suffolks is about 16 hands. Their colour is always chestnut, no other colour occurring in the breed: the chestnut varies in shade in different horses. In addition to the chestnut colour, the Suffolks possess the following characteristic points: they are low on the leg, the limbs being comparatively short; this feature gives them the appearance of being longer in the body than is actually the case. The legs are not provided with "feather" as is the case with Shires and Clydesdales; the limbs of the Suffolk are free from long hairs, barring the tuft of hair at the back of the fetlock. The feet are comparatively small in size. The legs of Suffolks frequently are comparatively light in regard to the size of their body. The breeder of Suffolks should certainly aim at breeding them with as stout limbs as possible. The Suffolk is of a placid disposition, but a very willing and game worker, being the equal of the Shire in this respect. As the Suffolk is smaller and less weighty than the Shire, the former naturally does not possess the same powers of draught as the latter, owing to the smaller amount of weight he is able to throw into the collar. Suffolks are very suitable for farm work, but they are not nearly so much in request for haulage purposes in towns as Shires. The prices ruling for Suffolk horses are not as high, speaking generally, as are those for Shire horses. The Suffolk is chiefly bred in its native county, and the popularity of the breed is practically confined

to East Anglia, so far as regards England. Crosses between the Shire and Suffolk often furnish a very useful stamp of farm-horse. In making the cross the Suffolk stallion should be used on the Shire mare.



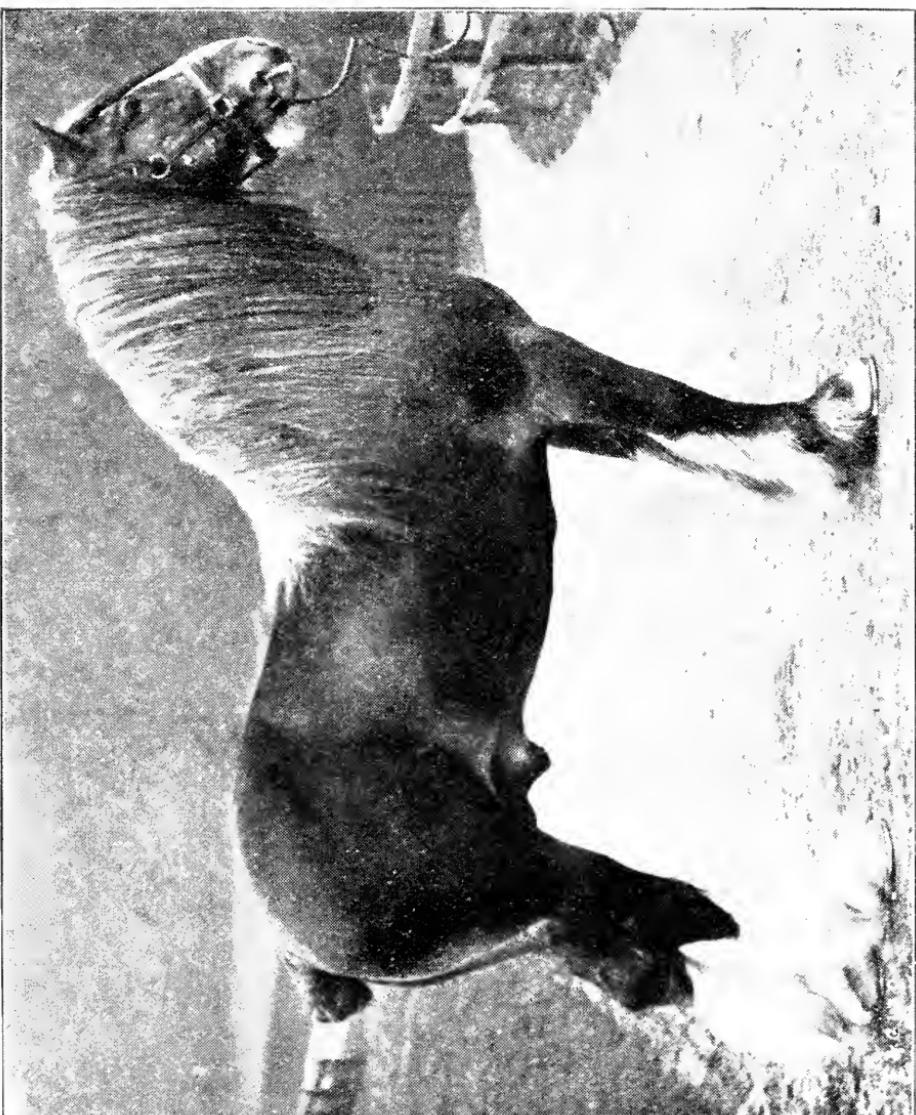
THE SUFFOLK PUNCH.

(Photo by C. Thonger.)

Clydesdales are a Scotch breed of heavy draught horses. They much resemble the Shire horse in general appearance, and it is, in fact, sometimes difficult for the uninitiated to distinguish between a Shire and a Clydesdale, although the breeds differ from one another in some important points. Clydes-

CLYDESDALE STALLION, "LORD STEWART."

(Photo by C. Reid, Wishaw.)



dales are not, as a rule, quite so big as Shires, the height of the former usually ranging from 16·2 to 16·3 hands, though stallions not infrequently measure more. The Clydesdale breed is also inferior to the Shire breed in regard to weight and massiveness, but, on the other hand, they are more active in their action than Shires, while their temperament is also less phlegmatic than that of the latter. They are excellent workers, and well suited for agricultural purposes.

Breeders lay great stress upon the shoulder-blades of Clydesdales being very sloping, while their pasterns are also nice and oblique. The legs of a Clydesdale are furnished with "feather" in the same way as is the case with Shire horses. The feathering is of soft and silky texture and abundant. It is considered a very desirable point in this breed that the points of the hock should incline inwards and be close together: in consequence of this feature, the toes of the hind feet are turned slightly outwards. The recognised colours of the breed are dark brown, black, and dark bay: white markings on the legs are pretty general.

Clydesdales are excellent and fast walkers: the sloping shoulders and pasterns being very conducive to free striding and easy action. A Clydesdale also moves well at the trot. In Scotland, the Clydesdale breed occupies the same position that is occupied by the Shire breed in England, and Clydesdales and cross-bred Clydesdales furnish the team-horses used on Scotch farms.

In England, Clydesdales are met with in the most northern counties, such as Cumberland, Westmorland, and Northumberland. In these districts, the Shire and Clydesdale are crossed with one another on frequent occasions, this cross resulting in the production of very fine heavy draught horses, which combine the weight of the Shire with the activeness of the Clydesdale. The Clydesdale can be greatly recommended as a team-horse on farms, but there is rarely an opportunity of buying Clydesdales in the midlands and south of England.

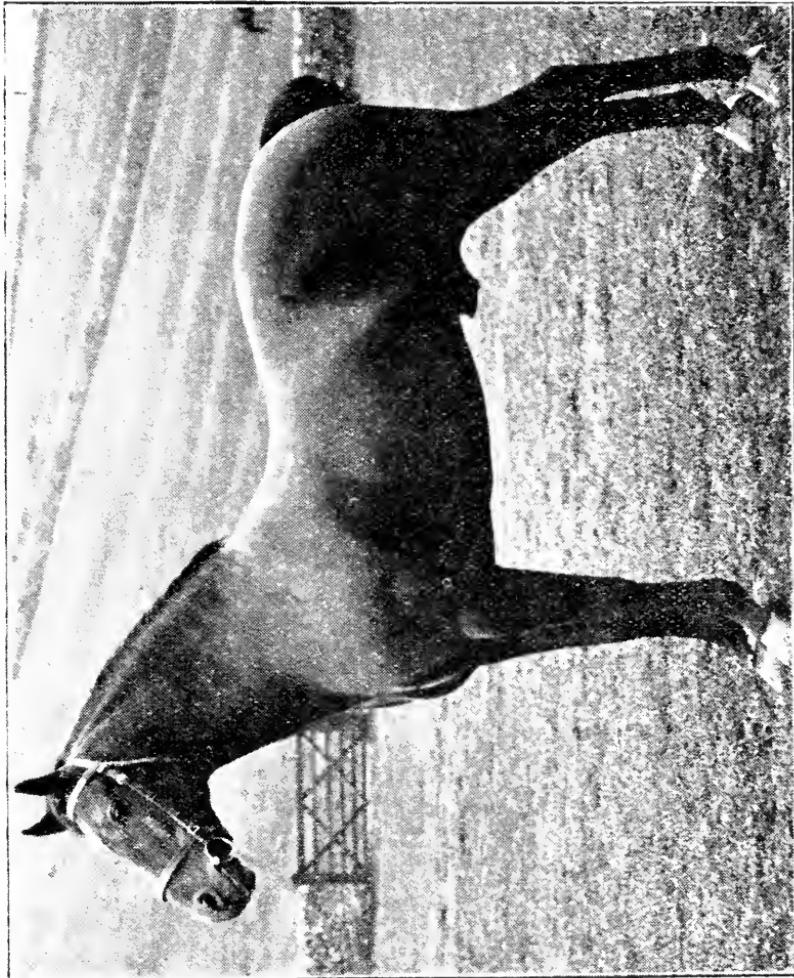
CHAPTER XIII.

HACKNEYS, CLEVELAND BAYS AND YORKSHIRE COACH HORSES.

Hackneys.—Though formerly described as a ride-and-drive horse, suitable both for the saddle and for harness, this description is no longer applicable to the Hackney of the present day. Hackneys are a breed of harness horses, whose principal characteristic is their high-stepping and showy trotting action. The height of full-sized horses ranges from 15.1 to 15.3 hands; occasionally, Hackneys 16 hands high are met with. Many Hackneys are less than 15.1 hands in height; the correct description for such is "Hackney Cob." The chief colours of the breed are chestnut, bay, and brown, while black, blue roan, and other coloured Hackneys also occur. Chestnut is by far the most common colour, and the colour is usually associated with white markings on the legs and on the face.

Typical Hackneys are "cobby" and compact in build. The neck is comparatively short, the breast is broad, and the back is short and broad, while the barrel is well rounded, the ribs being well sprung. The hindquarters are rounded in contour and muscular: viewed from the rear, they are broad, thick-set, and full. The legs are clean; the pasterns are of medium length, and the feet are of good shape. Breeders and judges of Hackneys attach most importance to the trotting action, in regard to which the following points must be noted: The action should be regular and even, and, while being high or "extravagant," it must also be elastic and graceful. In

front, there must be plenty of shoulder and knee action, the knees being lifted high and well bent. During the latter part of each stride, the knee must be straightened out, and the foot



'THE FAMOUS HACKNEY' Pony STALLION, "SIR HORACE."

Owner, Sir G. Greenall, Bart., Walton Hall, Warrington, Esq.; Breeder, C. W. Wilson, Esq.; Rignard Park, Kirby Lonsdale, Sirs; "Little Wonder 2nd," Dame, "Dorothy Derby,"

(Photo by G. H. Parsons.)

be flung forward in vigorous fashion, and just before the hoof comes to the ground, the leg should be poised straight. In regard to the action of the hind legs, the stifle joints and the

hocks must be well flexed. Good hock action is a most important point.

Two Types of Hackneys.—There are two types represented in the Hackney breed, which differ somewhat from one another. The one is the Norfolk type and the other the Yorkshire type. Hackneys of the Norfolk type are more "cobby," and thick-set in build than those of the Yorkshire type, the latter being more blood-like, and showing more quality than the former, owing to there being a considerable amount of thoroughbred blood in the Yorkshire-bred Hackney families. Norfolk and Yorkshire are the native counties of the breed, and it is in these two counties that Hackneys are principally bred. There are, however, some Hackney studs in all parts of England and in Scotland, and cross-bred Hackneys are bred throughout the country. Hackney stallions make very useful sires of harness horses when crossed with the right stamp of mare. It is customary for breeders of Hackneys to dock the tails of foals very short, and, when breeding horses of this type it is best to follow the custom, as it makes the animals more saleable later on.

Hackney Ponies.—These are miniature Hackneys, their size not exceeding 14.2 hands. With the exception of legs they do not differ in appearance from the full-sized Hackney.

Cleveland Bays.—The Cleveland Bays are a Yorkshire breed of horses, and are bred principally in that county, but also, to a small extent, in Northumberland and Durham. The Cleveland Bay is an upstanding, big horse, with clean legs: its height ranging from 16.1 to 16.2½ hands. The colour of this breed is always bay, with black points. Any white markings on the legs are considered very objectionable by breeders, and ought not to occur in pedigree horses. The principal points about the make and shape of Clevelands are as follows: The head is rather big and long. The shoulders, which should be fairly sloping, are muscular and typical harness horse shoul-



HACKNEY MARE, "ROSADORA."

Champion Mare at the London Hackney Show, 1904. Chestnut, 8 years old. Exhibitor, C. E. Galbraith, Esq., Terregles, Dumfries, N.B., Breeder, J. F. Richardson, Esq., Norton Lodge, Malton, Yorks. Sire, "Rosador." Dam, "Wild Daisy."

(Photo by Bowden Bros.)

ders. The body, taking the distance between the point of the shoulder and the point of the buttock, is lengthy. The hind-quarters are long and well turned, with a long croup and a well set on and well carried tail. The trotting action of Clevelands is low, resembling that of the thoroughbred in style. The Cleveland Bays represent the biggest stamp of carriage horse, and are upstanding animals, possessing size and substance, but they are frequently too big and heavy in build, too coarse in appearance, and too deficient in quality to be regarded as carriage horses. They are suitable for doing farm work, though, of course, they do not possess the same powers of draught as heavy draught horses. In many cases, Clevelands would suit the requirements of small holders as well as any other kind of horse, seeing that they combine suitability for farm work with suitability to perform work on the road at a trotting pace, while the mares are, further, very useful for breeding purposes.

Cleveland Bays are often crossed with the thoroughbred, and this cross produces both hunters and carriage horses. They are also sometimes crossed with the Hackney, this cross resulting in the production of showy and pretty big harness horses, with good action.

Yorkshire Coach Horses.—Yorkshire Coach Horses are, like the Cleveland Bays, a Yorkshire breed of horses. They are made upon much the same lines as Clevelands, but they are lighter in build, show more quality, and look more blood-like than the latter. The Cleveland Bay furnished the foundation stock from which the Yorkshire Coaching breed was gradually evolved by crossing with the thoroughbred. Thus the Clevelands and Yorkshire Coachers are related to a considerable extent. Yorkshire Coach horses are of the big carriage horse type, being upstanding animals, and possessing good length of body. The head of a Yorkshire Coacher is smaller, and shows more quality than that of a Cleveland. The shoulders should slope well, and are massive. The hind-quarters and the croup are long. The legs are clean. The height of Yorkshire Coachers varies from 16.1 to 16.2½ hands.

The only two colours of the breed are brown and bay, in either case with black points. White markings are not liked by breeders, but they sometimes occur. The Yorkshire Coach horse is much used as a carriage horse in London, and well matched pairs of this breed fetch high prices, as there is a considerable demand for them, while the supply is small. The trotting action of the breed is good, and fairly high in front, but nothing like that of the Hackney in this respect. Yorkshire Coach horses are bred practically only in Yorkshire.

CHAPTER XIV.

ASCERTAINING THE AGE OF HORSES.

THE appearance of the incisor teeth (or front teeth) of horses varies at different ages, and it is, therefore, possible to ascertain the age of a horse up to a certain point by examining the teeth. A horse has in all twelve incisor teeth, of which six are in the upper jaw and six in the lower one. As is the case with other animals, the first set of incisor teeth in a young horse are temporary ones. These temporary teeth are also often called milk teeth. They are shed at certain intervals, and their place is taken by other teeth, which are retained permanently in the gums: these are termed permanent teeth.

The Milk Teeth differ considerably in appearance from the permanent ones, and there is no difficulty in distinguishing between the two sets. The milk teeth are small in size and quite white in colour, while the permanent teeth are large,

and look yellowish and dirty; they further possess a vertical groove down the centre of their external face, which is not present in the milk teeth.

The Incisor Teeth in each jaw are divided into three pairs, known respectively as the "central," the "lateral," and the "corner" incisors. The positions of these various teeth are shown below. At birth, a foal possesses its milk teeth in a rudimentary form, and they break through the gums at certain intervals. The central incisors appear soon after birth, while the laterals generally make their appearance when the foal is about a month old. The corner incisors, as a rule, break through the gums at nine months old. A yearling foal, therefore, has a complete set of milk incisors.

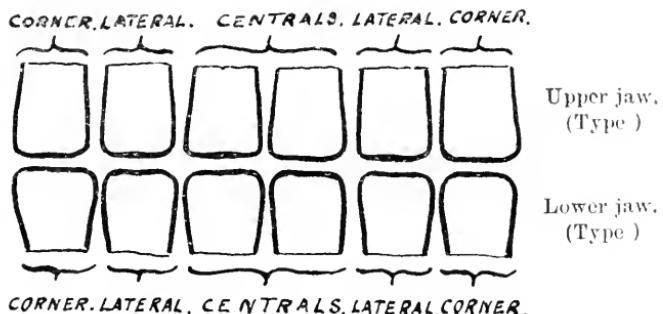


DIAGRAM SHOWING POSITION AND NAMES OF TEETH.

Age Indicated by Changes in the Teeth.—The milk teeth are shed, and replaced by permanent incisors, in pairs, and at intervals of a year. First of all, the centrals are shed, next the laterals, and finally the corner incisors. The centrals are changed when the young horse is two and a-half years old, or somewhat earlier or later, according to whether the animal in question is forward or backward in condition. Twelve months after the permanent centrals have appeared, the permanent laterals make their appearance, and take the place of the milk laterals; when the change in the lateral incisors takes place, the horse is therefore about three and a-half years old. Again, twelve months later, when the animal is

four and a-half years of age, the milk corner incisors are shed, their place being taken by the permanent corner incisors. The milk, or temporary, incisor teeth have now all disappeared, and the horse has a complete set of permanent incisors, though the corner incisors are not, as yet, level with the centrals and laterals. The corner incisors do not show their full development until the horse is five years old. When a young horse is in possession of its complete set of permanent teeth it is said to have a "full" mouth. Until horses become five-year-olds, their age is readily ascertained by the replacement of the milk incisors by the permanent ones, as just described. After a horse is five years old, its age can be told by the changes occurring in the "tables" of the incisor teeth in the lower jaw. The "table" of an incisor tooth is the top surface, which is hidden from view when the teeth are closed. In these "tables" there are originally dark-coloured marks, which gradually wear away owing to the friction between the upper and lower teeth, and they finally disappear almost completely. This wearing-away process of the "marks" goes on very regularly. The marks in the centrals disappear first, next those in the laterals become worn away, and lastly, those in the corner incisors are lost. About one year's interval occurs between the disappearance of the marks in the respective pairs of incisors. When a horse is six years old, the mark in the centrals has more or less worn away, but the marks on the other incisors are fully apparent. At seven years old, the marks in the laterals begin to disappear, and finally, at eight years old, the corner incisors also gradually lose their marks. After this stage, it becomes more and more difficult to tell the age of a horse. Changes still continue to occur in the shape of the teeth, but these changes do not afford an easy or very satisfactory indication of a horse's age. The changes consist in the incisors becoming more or less triangular in shape at their table surface. When the horse is nine years old, the tables of the centrals assume a triangular shape: a year later, that is to say, when the animal is ten years of age, the lateral incisors also become triangular, and lastly, at eleven years old the corner incisors do the same. Of

course, the change from the elongated and oval shape of the tables to a triangular shape does not take place suddenly, but very gradually, as the change in shape is caused by the wearing away of the teeth. The triangularity of the tables of the incisors increases as the horse gets older.

Tushes.—In addition to the incisor teeth, the so-called "tushes" afford some information as to a horse's age. The tushes are the small and pointed teeth, which are placed in the gums a short distance behind the corner incisors, and in front of the back or molar teeth. Only stallions and geldings are provided with tushes, these teeth being absent in mares. There are exceptional cases in which a mare may be met with which has rudimentary tushes, but such an occurrence is very rare. Tushes are always of a permanent character, and they make their appearance usually when a horse is between four and five years old. Thus the absence of the tushes in an entire or gelding points to the animal not being older than four and a-half or five years. At first, the tushes are very pointed, but they gradually become blunter after the horse has had them a year, and the older the animal is, the blunter are the tushes.

Position of Teeth an Indication of Age.—In young horses, the position of the incisor teeth in the gums is upright. As the horse get older, the position of the teeth becomes more and more sloping, and in old horses, the sloping position of the teeth is very pronounced. It is, therefore, an easy thing to tell an old horse by the fact of its teeth being in a very sloping position in the gums. The older the horse is, the more will its teeth slope in the gums.

Other Indications of Age.—Besides the condition of the teeth, there are some other indications of age in a horse, but these indications afford no accurate guidance in ascertaining the age of horses. They merely evidence the fact that a horse is old, and long past its prime. One of these indications consists in there being a big hollow or depression

over the eyes. In horses that have not passed their prime, this depression over the eyes is absent. The older the horse gets, the greater does the hollow become. Grey hairs about the eyes are another indication of great age in a horse. The front legs of old horses generally show much wear, and the knees often become bent. In the case of grey horses, their coat becomes of a lighter hue every year, and greys eventually turn almost, or wholly, white.

The Terms "Rising" and "Off" require explanation in connection with the age of horses. Supposing a horse is nearly four (say within four months or less of that age), it is said to be "rising four." A horse just over four years old is said to be "four off." The same terms are, of course, used in connection with any other age. Thus horses may be "rising five," "five off," "rising six," "six off," and so on. As foals are usually born in the spring months, each year of a horse's age is, as a rule, completed in the spring. This fact should be remembered, as it helps to determine the age of a horse.

Table Showing Age of Horses.—Appended is a short table, showing the indications of the age of horses from two years to nine years.

| Age of Horse. | Incisor Teeth. | | |
|---------------------|-------------------|------------------|-------------------|
| | Centrals. | Laterals. | Corner. |
| 2 Milk | Milk | Milk | Milk |
| 3 Permanent | Milk | Milk | Milk |
| 4 Permanent | Permanent | Milk | Milk |
| 5 Permanent | Permanent | Permanent | Permanent |
| 6 Mark disappearing | Mark complete | Mark complete | Mark complete |
| 7 Mark disappeared | Mark disappearing | Mark complete | Mark complete |
| 8 Mark disappeared | Mark disappeared | Mark disappeared | Mark disappearing |
| 9 Mark disappeared | Mark disappeared | Mark disappeared | Mark disappeared |

CHAPTER XV.

BREEDING HORSES.

Proper Age for Breeding.—Fillies of the heavy draught horse class are often put to the horse when two years of age, so that they bring a foal at three years old. This plan should, however, only be followed if the filly is well developed and forward in condition; if a filly is backward and has not made satisfactory growth, it would be quite wrong to breed from her so early, as this will stunt her development and prevent her from ultimately attaining the maximum size. Most draught fillies, if they have been properly treated, will be quite ready to be put to the horse at three years old. Fillies of the light class ought not to be bred from until they are three years of age, and then only if their development and growth is satisfactory. It must here be remarked that it is inadvisable to breed from hunter and harness fillies intended for sale, because their appearance is apt to suffer if they have a foal. Mares will continue to breed foals until they are over twenty years of age, more especially if they are regularly bred from.

The Gestation Period of mares lasts, on an average, approximately eleven months, or forty-eight weeks. Its length, however, varies in different cases, and it may be longer or shorter than the average time.

The Breeding and Foaling Season extends over the spring, the principal foaling months being March, April, and May. A mare ought not to be served later than June, as otherwise her foal will be born too late in the season; late foals do not, according to the general opinion of horse-breeders,

do so well, and remain smaller than foals born earlier in the season. It is certainly best to arrange that mares shall foal pretty early in the spring, in order to allow of the foal making



F. G. 521.

SHETLAND PONY MARE, "BRACELET."
Winner of a First Prize at the London Polo and Riding Pony Show, 1908. Exhibitor: R. W. R. Mackenzie, Esq., Earlsfield, Leuchars, Fifehire. Sire: "Thor." Dam: "Brett." (Photo: Sport and General.)

there are exceptions to this, however, but even supposing a mare should be served when not in season, conception will not take place.

Signs of Oestrus.—The fact of oestrus being present is more or less apparent; the mare when in season is inclined to kick and is very touchy or ticklish about the hindquarters; the appetite is often irregular; when approached by other horses, the mare may squeal and swish the tail about; she makes frequent attempts to stale, but passes very little urine; a viscous, whitish liquid is secreted at intervals, and the visible part of the generative organs becomes slightly swollen. In the case of some mares, the manifestations of oestrus being present are not very marked, and may even escape notice, unless the owner or attendant is specially on the look-out for them. This particularly applies to draught mares.

The Period of Oestrus, as a rule, lasts from four to six days; it may be shorter or longer. Oestrus recurs at pretty regular intervals, the average duration of the interval being about three weeks. Mares that have conceived and are carrying a foal do not come into season, except in very rare cases. The cessation of the periodical occurrence of oestrus is therefore a certain sign of a mare being in foal as a general rule.

Service.—One service on the part of the stallion may be sufficient to put a mare successfully in foal. It is, however, very inadvisable to rely on a single service, because the chances are great that it has failed to be successful. The mere fact of a stallion serving a mare does not by any means imply that she will become in foal. It is customary, and highly advisable, to "try" the mare again three weeks after the first service: that is to say, she is put to the horse again, and served a second time if she will take the stallion. If she refuses him, it may be inferred that she has conceived all right the first time. If a mare shows signs of oestrus some time after the second service, she should again be put to the horse, if it is not too late in the season.

Breeding from Mares with Foal at Foot.—

A mare with a foal at foot generally comes into season from seven to ten days after foaling, and it is best to have her served by the horse on the ninth day, she being tried again, as recommended above, after three weeks have elapsed.

Condition of Breeding Mares.—Mares must be in good breeding condition when they are put to the horse. They must not be very fat, as a fat condition renders conception more difficult. It is also undesirable that mares should be very poor in condition, as this is not conducive to successful conception. Old mares that have never been bred from often do not conceive, and are difficult to get in foal. For this reason, the plan of buying old and worn out mares for breeding purposes frequently fails to be a success.

Barrenness in Mares.—It not infrequently happens that mares are barren. The causes of barrenness are various and many; space forbids of their being discussed in this handbook. Should a breeder find that repeated services fail to put a mare in foal, his best and only plan is to discard her. Sometimes, a mare, which proves difficult to put in foal, will successfully conceive if served by two different stallions within a few hours of each other.

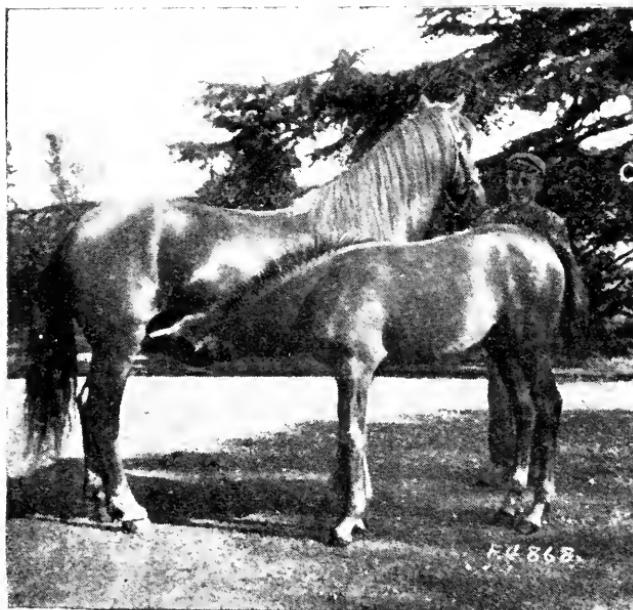
After Service.—After a mare has been served, she should be rested for a few hours, or, if she has been sent to the stallion and has to travel home, she must be walked, and should not be made to travel at a fast pace.



CHAPTER XVI.

MANAGEMENT OF FOALS.

Soon after being born, the foal will make its way to its dam's udder and suckle; if thought necessary, the foal's muzzle may be gently directed to the udder, should it appear not to be



ARAB MARE AND FOAL.

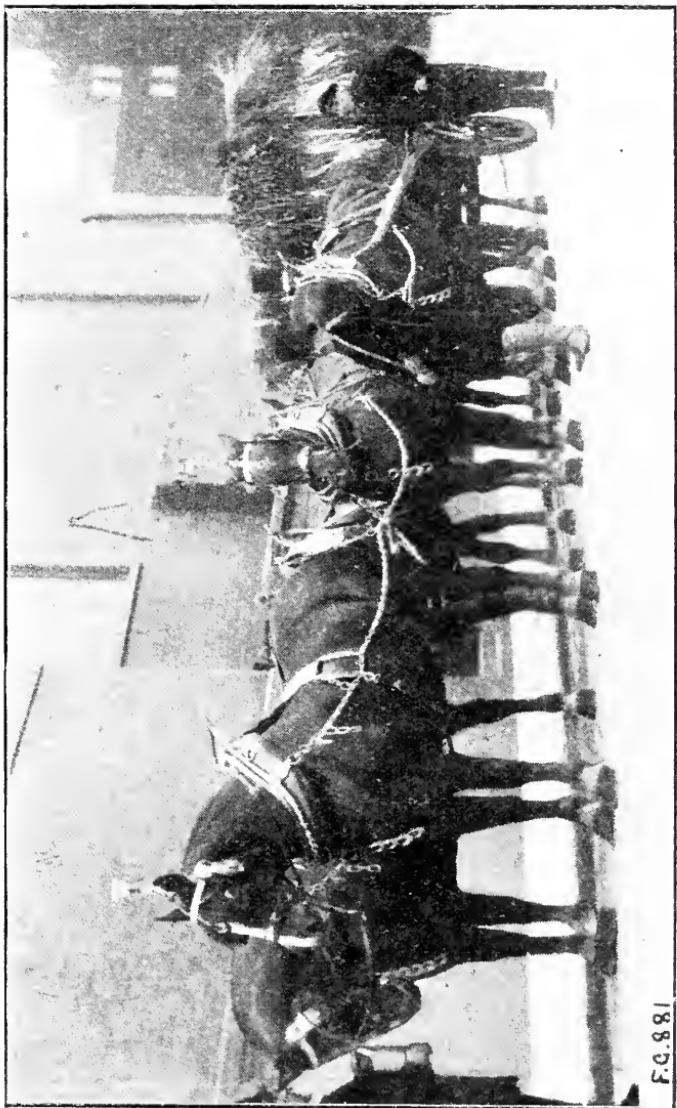
(Photo by E. M. Hall.)

able to find the latter by itself. The dam's milk is, of course, the only food of the foal until it is capable of eating solid food. Care must be taken to feed the dam liberally and properly, so that she may yield a plentiful supply of milk; the foal, in fact, must at first be fed through its dam. Oats, bran, and plenty of green forage stimulate the flow of milk, and must,

therefore, be given to the mare if it is too early in the season to turn her out to grass. As soon as the weather is sufficiently warm, mare and foal should be turned out on a good pasture. If there is a good growth of grass and herbage, the mare may not require any additional food, as good grazing produces a nice flow of milk. But, in the case of poor grass-land and during droughty weather, when the grass fails to grow sufficiently for want of rain, the nourishment to be obtained by grazing will hardly be adequate to meet the requirements of both dam and foal, and, under these circumstances, some additional food in the form of oats or maize and bran should be provided. When it is too early in the season to allow of mare and foal being out at grass day and night, they ought to be turned out for a few hours each day when the weather is dry.

Working Mares after Foaling.—A mare can be worked a week after foaling: at first the work must be light, it being increased in a gradual manner. The dam must not be kept away from the foal for more than four hours at a time during the first few months, because otherwise the foal will become too hungry, and is apt to overfeed itself by sucking too large a quantity of milk at a time, which gives rise to diarrhoea and a general upset of the digestive system. Nor must the foal be allowed to suckle its dam when the latter is in a heated condition from work, as in this case the milk is very liable to disagree with the foal and to cause digestive troubles. When parted from their dams, foals evince great anxiety, and make efforts to join them; it is, therefore, necessary to see that they are well secured while their dams are away, and that there is no risk of their injuring themselves or getting away.

Feeding the Mare.—When a mare with a foal at foot is worked, she must receive extra food, in addition to the allowance of corn she gets as a working ration. This extra food should consist of oats, bran, and green forage; it is especially necessary to feed plenty of the latter in order to stimulate the yield of milk. Foals require plenty of fresh air and



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A TEAM OF SUFFOLK PONY HORSES.

This very fine team was exhibited at the Olympia Horse Show by K. M. Clark, Esq.
(Photo - Sport and General.)

exercise from the first week of their life, and it should be seen that they get these two things in all cases.

Rearing Foals that have Lost their Dams.—

If the dam of a foal happens to die, the latter may be reared either by a foster-dam or by hand. In rearing a foal by hand, cows' milk is used, which should be diluted with water in the proportion of one part of water to five parts of milk; a little sugar should also be added, and the milk when given to the foal must be at a temperature of 95 deg. Fah. A foal is taught to drink milk in the same way as a calf, i.e., by putting the hand in the bottom of the pail and letting the animal suck the finger. It should be fed five times a day for the first three months, and after that four times a day until it is weaned.

Teaching a Foal to Eat.—When turned out with their dams, foals, after a time, commence to graze a little, gradually consuming more and more grass and herbage as they grow older. They must also be accustomed to eat dry food as soon as possible; the proper dry foods for them are crushed oats, dry bran, and meadow hay. The way to teach a foal to eat solid food is to give it an opportunity of eating crushed oats, bran, and hay along with its dam, the food being placed low enough to be accessible to the foal. Once the latter has got quite used to eating the food provided, some arrangement should be made which will permit the foal to gain access to it without the mare being able to reach it, as otherwise the dam will consume what is intended for her foal. Even when there is a plentiful supply of good grass and herbage on the pasture, it is best to give a few crushed oats and a handful or two of hay to foals, as this will help to bring them on rapidly, and keep them in good condition.

The Weaning Process entails some extra trouble in attending to foals, but if they have been thoroughly accustomed to eating dry food, and have been partaking of the latter for some time before they are weaned, matters will go smoothly enough when the time arrives to wean them. The

age at which foals are weaned varies considerably in different cases, and depends upon circumstances. If the mare is required to work, the foal should be weaned comparatively early, while if she is running out at grass for the whole season, there is no necessity to take her foal away from her until the end of October. If a mare which is suckling a foal falls away in condition very much in consequence of the drain on her system through yielding milk, the foal must not be left too long with her, or she will be considerably weakened. So far as concerns the foal only, the longer it is allowed to stay with its dam, supposing, of course, that the latter continues to yield an appreciable quantity of milk, the better will it be for its growth and development, if the dam's milk is supplemented by other food.

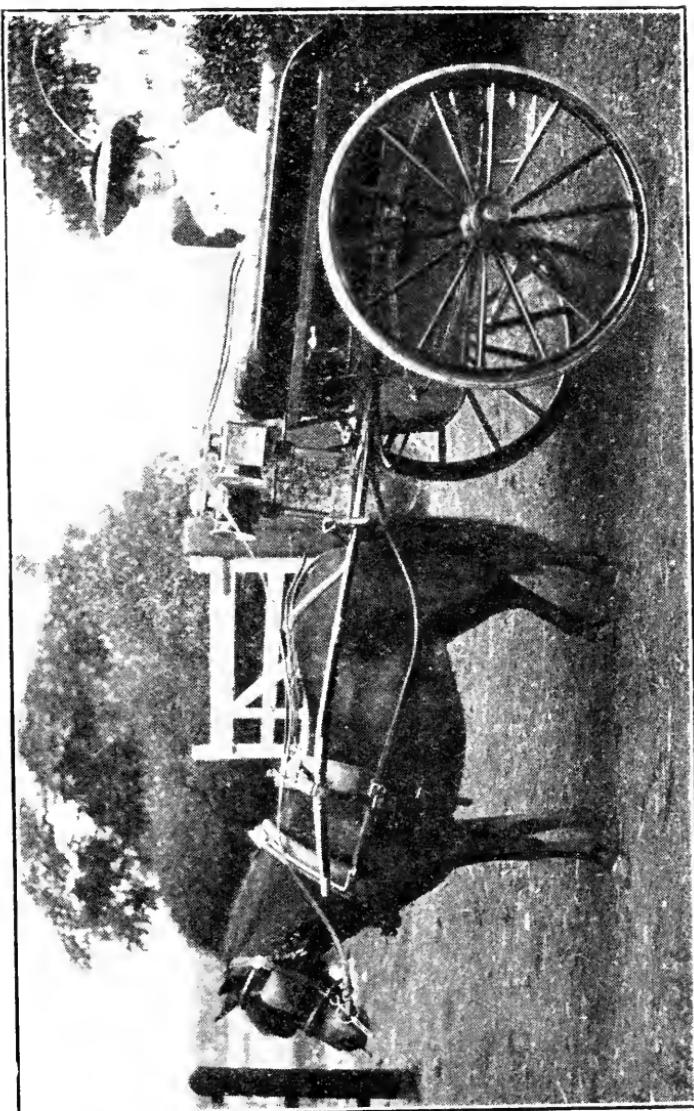
Age When to Wean.—Foals are weaned at ages varying from four and a-half to six months. The most usual time of weaning is from the second half of September till the first week in October. The weaning process should be completed quickly; for a few days, the foal may be allowed to suckle its dam once a day, and then the separation of the two should be final. The foal will soon accommodate itself to the change, if it has learnt to eat oats and hay whilst still with the dam.

Treatment of Mare after Weaning.—The udder of the mare requires some attention when the foal is weaned. It should be bathed twice a day for a few days with vinegar, and if it becomes much distended at first, after the foal has been removed for good, the teats must be drawn so as to relieve the tension. On no account, however, must all the milk be withdrawn, as this will cause the secretion of more milk; what is required is to remove only a sufficient quantity to relieve tension and ease the udder. Until the flow of milk has completely subsided, the diet should be rather meagre. Should the secretion of milk after the removal of the foal be very active, a drench composed of one pint of linseed-oil and four drachms of aloes may be administered, as this has a drying effect on the flow of milk.

CHAPTER XVII.

MANAGEMENT OF YEARLINGS, Etc.

AFTER having been weaned, foals should be kept on a pasture affording good grazing, and they should receive a daily feed of some crushed oats and a little hay. The quantity of food provided must depend upon the nature of the grazing, and the condition of the foals. If they fall off in condition, the allowance of dry food must be increased. The great thing is to keep foals progressing continually after they have been weaned, and not to let them lose condition, as they are apt to do if not properly treated in the way of food. An allowance of, say, about two pounds of corn a day will be ample as a rule from the time the foals are weaned until the following spring. While there is a plentiful growth of grass, only little hay need be given, but the ration of hay must be gradually increased as the food afforded by the pasture decreases, and during the winter season, hay must be provided in a liberal manner. A quantity of chop, consisting of two parts of chaffed oat-straw and one part chaffed hay must also be given through the winter, this being fed along with the corn. An allowance of about four pounds of chop is the right quantity for foals of light class, while those of the heavy draught class should be given two pounds more than this. The hay should be fed *ad libitum*, as much being given as the foals will eat. An allowance of half a pound to one pound of dry bran per diem is a useful addition to the food of foals during the first winter. Some roots must also be given every day, in order to keep the bowels sufficiently open. In the case of backward foals, and those that do not thrive satisfactorily, the feeding of a daily allowance of skim milk or butter milk will be of great advantage in improving their condition.



A TYPICAL SHETLAND PONY.
(Photo by G. H. Parsons.)

Housing Foals in Winter.—Towards the beginning of the winter, when the nights get cold, say, at the end of October, it is advisable to house the foals at night, turning them out every morning after they have had a feed of dry food, consisting of some chop and a portion of their allowance of oats. The rest of the corn and chop should be fed when the foals are taken in in the evening, while the last thing at night, plenty of hay should be given—as much as the foals will clear up over-night. Many farmers do not house their colts at all throughout the winter, but it is certainly the better plan by a long way to take them in at nights. Exposure to cold and wet in the winter retards growth and development in growing horses. At night the foals may either be placed in a loose box of suitable dimensions or in a straw-yard, provided with a weather-tight shed at nights. They should have a dry bed, and a tub or tank filled with water must be available for them. During the day-time, foals should always be turned out, as the plan of housing them in the day as well as at night deprives them of the exercise and fresh air which are essential to their proper development and to a healthy condition. But it is a useful thing to have a shed on the field where the colts are turned out, so that they can obtain some shelter during the day-time if they require any.

Summer Treatment of Yearlings.—At the commencement of the grazing season in the following spring, the foals, which now become "yearlings," should be left out at grass day and night. With a plentiful growth of grass and herbage of a nourishing character on the pasture, no additional dry food will then be required, as a general rule. Should a yearling be backward in condition, it is advisable to feed some oats, which no longer require to be crushed, every day.

The Management of Yearlings, Two-year-olds, and Three-year-olds, both during the summer and winter seasons, is simple, and involves very little trouble. During the grazing season, that is to say, from the spring until the end of the autumn, they will obtain all food that they

require for proper growth and development by grazing. The pasture on which they are running should, of course, afford a good and continual growth of grass and herbage of good quality. The supply of water on the pasture must be good and ample; if there is no natural water supply, such as a brook or a pond, a large water tank is required, and this must be kept constantly filled with clean water. The tank requires to be cleaned out thoroughly every fortnight. There should be ample shade, as exposure to the hot noon-day sun is detrimental to the well-being of horses. If shade is not furnished by trees or a well-grown hedge, some kind of shed ought to be erected in order to afford the required shade. During a long-continued drought, when the grass gets burnt up, and there is no fresh growth on the pasture, the young horses ought to receive some additional food in order to keep them in satisfactory growing condition. This additional food may consist either of oats or of cut lucerne or sainfoin, according to which can be most conveniently provided.

Winter Treatment.—During the winter season, it is best to house the young horses at nights, but in the day time they must be turned out. The food of yearlings, two-year-olds, and three-year-olds, during the winter should consist of hay, oat-straw, chop, corn, and roots, in addition to the grass which they consume by grazing. The grass will, of course, not yield much nourishment, being both scanty in supply and of poor quality. No rules as to the quantities of food to be given can be laid down; but in all cases, enough must be given each day to satisfy the appetite of the young horses completely, and to keep them in good condition. It is a bad plan to let colts lose condition in winter, trusting to the pasturage in summer to make up for this. The thing is to keep young horses going on all the time and making continual growth, and carefully to avoid checking their development so far as can be helped. The allowance of corn for young horses, after the first winter, should be from two to three pounds a day. In the case of young horses of the light class, the corn should be oats, but for those of the heavy class, a mixture of two parts of oats and

one part of maize may be fed, if this proves economical. Oat-straw and hay should be given ad libitum. A daily allowance of about a pound of bran will be useful. Care must be taken in the winter to keep the bowels of young horses in good order by giving a sufficiency of roots. Bran-mashes will not, as a rule, be required, but if the bowels appear constipated, a bran-mash should be provided.

When to Work Young Horses.—Young horses of the draught horse class may be slightly worked when about two-and-a-half years old. Those of the light class must not be broken in so early; in their case, the breaking-in process should be deferred until they are three and a-half years old.

It is of great importance to handle young horses as much as possible from foalhood, so that they may get quite docile and quiet. They must always be treated with kindness, and all rough treatment or punishment should be rigorously avoided.

The Hoofs of all Young Horses require to be carefully examined about every two months. If they have become overgrown at any part, the superfluous horn must be trimmed away, and care must be taken to keep the hoofs in good shape. Neglect to do so may result in the feet becoming permanently misshapen, or even in their assuming a permanent turned-in or turned-out position.

Foals and young horses do best when two or more are together. Single animals feel lonely, and pine for companionship. If it can be done, therefore, it is always advisable to rear foals together, and to let them have company.

Entire colts should be castrated when about a year old. But if an entire colt is backward in development, and has not made satisfactory growth, the operation of cutting him may with advantage be postponed for a few months, or even a year, beyond the usual time. Castration must be done by a veterinary surgeon, and cannot be done by an amateur.



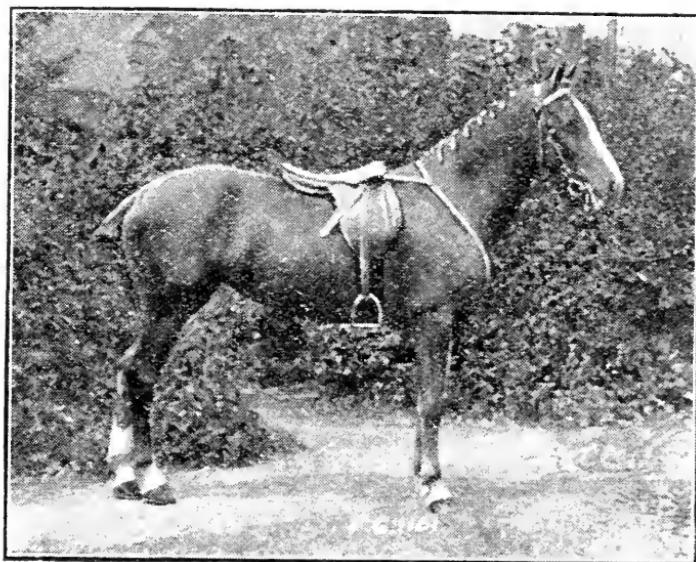
CHAPTER XVIII.

BREAKING-IN YOUNG HORSES.

The Preliminary Training.—The process of breaking-in young draught horses to the collar is not a difficult matter, the chief requirements on the part of the breaker being patience and gentleness. When the time arrives to put a young draught horse to work, it must first of all be accustomed to wearing a bridle and carrying the harness. This is done by putting these things on the animal while it is standing in the stall, and leaving them on for a couple of hours for three or four days. The trace chains should be flapped against the horse's flanks and thighs for a few times, until it learns not to take any notice of this when it is done. The bit used for a young farm horse must be pretty thick; if the mouth-piece be very thin, it will hurt the colt's or filly's mouth.

Breaking to the Collar.—Having become accustomed to the bit and harness, the young horse may then be made to help to draw the plough. It should be worked along with a steady old horse. When three horses are used as a team and are harnessed in single file, the young horse should occupy the middle position. A man or boy must walk at the young animal's head until it learns to go straight and to obey the reins properly. Gentle and considerate treatment of the colt or filly while they are being broken in is of the utmost importance, and all rough treatment and punishment must be carefully avoided. During the first week, an hour's work is ample for young horses; in the second week, they may be worked for two hours, and after that the hours of work may be gradually still further extended. But in no case must young horses be

worked really hard, as if this is done, their constitutions, etc., will be injured. It should always be remembered, in the case of young colts and fillies, that neither are their bodies and working powers fully developed, nor do they possess anything like the strength and working capacity of a mature horse. When a young farm-horse has learnt to go steadily in front of the plough, it may be harnessed along with a steady mate to the harrows, the cultivator, and the roller. Later on, it should be put between the shafts of a cart, and taught to pull the



A GOOD TYPE OF SADDLE NAG.

latter when empty. Carting work taxes the powers of a horse pretty severely, and young, immature horses ought not to be asked to do any of this kind of work, as it is too severe in character for them. Young horses should also be kept off the hard road as far as possible, because road work is injurious to the legs and feet, and the limbs of young horses are not nearly so well able to stand the effects of work on hard roads without injury as mature horses.

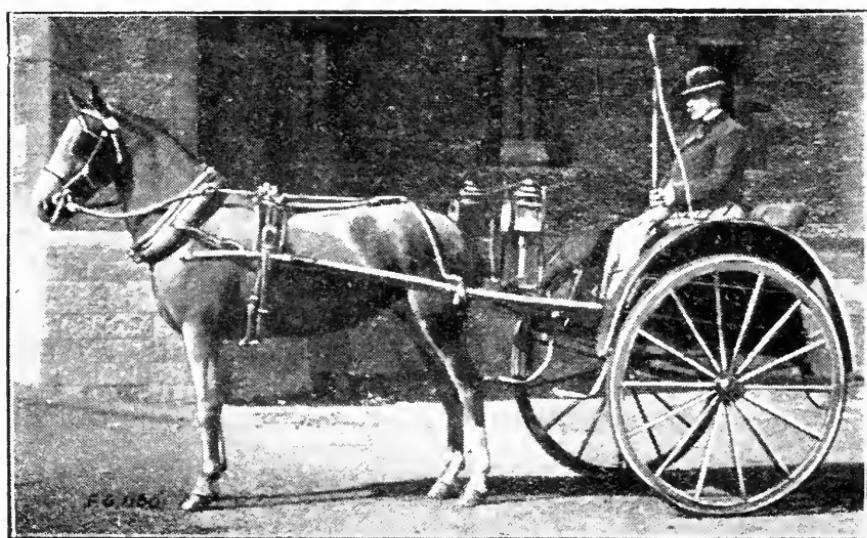
Rest Required in Summer.—After colts or fillies have had a spell of work on the farm during the winter season, it is advisable to give them a prolonged rest in the spring and summer by turning them out to grass for three months or more, after the spring cultivations have been completed. Such a rest will do them immense good, while the want of it will certainly prove injurious in the long run. There is no chance of a young horse being worked too lightly, but there is always much risk of its being worked too severely, and the breeder of young horses should, in all cases, be careful not to tax their powers too much by thoughtlessly letting them do more work than they can stand without injury.

Breaking-in to Saddle and Harness.—The breaking-in of light horses to saddle and to harness is a much more troublesome and laborious business than the breaking-in of a draught horse to farm work. This is due, in part, to the fact that light horses are much more high-spirited, and of a more highly-strung temperament than draught horses, and in part to the fact that the breaking-in to saddle and harness work involves giving a horse a much more complicated education than is the case when a horse is merely broken in to farm work.

In a great many cases, the breeder of light horses has neither the time nor the ability to break-in his young horses satisfactorily, and, under such circumstances, the only way is either to send them to a professional breaker or to sell them in an unbroken condition.

Harness Horses and Hunters.—Much can be done to facilitate the actual breaking-in process of young harness horses or hunters by giving them plenty of handling while they are foals, yearlings, two and three-year-olds. This handling should consist in teaching them to wear a headstall and to lead quietly, to allow themselves to be touched all over the body, to let their feet be picked and held up, to stand quietly when tied up in a stall, and to be generally docile. The breeder of the young horses and their attendant should come

into plenty of close contact with them, and make much of them whenever possible. They must invariably be treated with kindness and gentleness, and should never be frightened or upset by harsh treatment or actual punishment. There are some exceptional cases in which young horses show a disposition to viciousness, and under such circumstances, firm treatment is requisite in order to nip any vicious tendencies in the



USEFUL NAG FOR HARNESS.

bud: but such firm treatment must not degenerate into rough treatment. As a general rule, young horses become very docile and submissive if they are kindly treated, and if brought into plenty of contact with their breeder or attendant. If, on the other hand, they are left to themselves, and no effort is made to render them docile through frequently handling them and treating them with kindness, they will become wild in disposition, and cause a great deal of trouble when the time arrives to break them in.

CHAPTER XIX.

MANAGEMENT OF BROOD MARES.

IN-FOAL mares which are worked have to meet both the demands entailed upon them by performing their work and the requirements of the developing foal within them. It is therefore necessary that they should be fed liberally on nourishing food, and an extra allowance of corn in addition to their ordinary ration should be provided. Should the in-foal mare be turned out to grass, no food in addition to the grazing is required if the pasture is in good condition. During the first six months or so of the period of gestation, no special treatment of in-foal mares is called for, beyond seeing that they are liberally fed. As the mares advance in pregnancy, and become heavy in foal, they must be treated with special care and consideration, in order to prevent the occurrence of abortion or premature slipping of the foetus. In leading a pregnant mare in or out of the stable, care must be taken that she does not knock up against the door-posts with her belly, and accidental blows on the abdomen must be guarded against as much as possible.

Working Brood Mares.—Both heavy and light mares can be worked regularly up to within a short time of the date of foaling, but the work must not be too severe during the second half of the period of gestation. The nearer the date of foaling approaches, the more considerately must the mare be treated when at work. A heavy in-foal mare should not be galloped, nor driven at a very fast pace. Nor should she be asked to pull a very heavy weight, especially up hill; neither must she be called upon to back a farm cart or waggon when heavily laden, or to hold these vehicles up when

going down steep hills. In brief, all work of a severe character, or which entails great exertion on the animal, must be avoided.

Feeding Brood Mares.—As pregnancy advances, the feeding of the mare must receive extra attention. All sudden and abrupt changes in the diet, which are liable to bring about digestive disturbances, must be avoided. It is inadvisable to feed too much rough fodder to heavy in-foal mares, as the abdomen is already abnormally distended by the foetus in the womb, and undue pressure on the latter may easily be caused if the intestines are distended by large quantities of hay or chop, resulting, perhaps, in abortion occurring. Bran-mashes and roots should be given pretty liberally, in order to keep the bowels well relaxed and the system cool. As soon as green forage becomes available, a goodly allowance of this should be provided, but a violent change from dry fare to green-soiling must, of course, be avoided.

It is very important to guard against constipation, the bowels requiring to be kept open. If plenty of laxative food is provided, no opening medicine will be needed, as a rule. Should it be deemed necessary to use a purgative, linseed oil is the best agent to use. All violent purging of heavy in-foal mares must be avoided, and physic is quite out of place. Oats and bran are the best concentrated foods to use for pregnant mares, but maize can also be used in conjunction with oats. Beans are too heating, and must not be fed. It is not advisable to let mares which are heavy in foal drink ice-cold water, as this may upset them.

Fatness in Brood Mares.—A fat condition of mares far advanced in pregnancy is the reverse of desirable, and, while feeding them well, they must not be allowed to get actually fat. The risks attending parturition are much greater in the case of fat mares than in that of mares in proper breeding condition—i.e., well-nourished, but carrying no fat. If the mare is in the proper condition and healthy, no undue risks are attached to parturition; a certain amount of risk is, of

course, always present. These risks ("foaling risks") can be covered by insurance with one of the live-stock insurance companies.

Indications of a Mare being about to Foal.—

The indications of approaching parturition are: The belly, which has gradually increased in size during the period of gestation, is large and distended. In some cases, this feature is much more noticeable than in others. The muscles of the back in the region of the loins become slightly relaxed, the back showing some hollowness in this part as a consequence. The udder swells more or less, and a waxy substance is secreted at the teats, this process being known as "waxing." In some cases, mares begin to "wax" only a few days before foaling, while in others, the waxy substance makes its appearance at the teats a few weeks before birth. A breeder ought, of course, to note down the date on which his mares are last served, so that he has an approximate idea when to expect the foal.

Treatment before Foaling.—

A few days before the birth of the foal is expected, the mare should be stabled in a roomy box if it is early in the season and the weather is cold. If the date of foaling falls in May, and the weather is warm enough, she may be placed in a straw-yard, and an open shed will afford all the protection she and the newly-born foal will require. The floor of the box or of the shed must be well littered with clean wheat straw. Regular work must cease some days before foaling, but gentle walking exercise for about a couple of hours should be given until the day of foaling. If the weather is genial, a few hours' run in a paddock will do as well as exercise.

Foaling.—

It is highly desirable that the breeder should himself be present when parturition takes place, in case assistance is required. The act of parturition generally proceeds satisfactorily and rapidly. It is, above all, essential that the mare should have plenty of room when foaling down, so that

she can move about and select whichever position she likes. Under normal conditions, the fore-legs of the foal, placed close together, and the head (muzzle in front), which lies on the top of the fore-legs are the parts which are the first to make their appearance. Human assistance is not required when parturition proceeds satisfactorily. Not infrequently, the position occupied by the foal in the womb is different from the normal one, this being termed a "mispresentation." In such cases, the mare may need assistance, in order to deliver herself of the foal, while in some instances, the mare may fail to expel her foal, even though the presentation is normal. Whenever it is necessary to assist in the birth of the foal, the services of a competent veterinary surgeon must be obtained as quickly as possible. An inexperienced amateur should not attempt to assist the mare in expelling the foal, if skilful assistance can be obtained.

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CHAPTER XX.

DISEASES AND AILMENTS.

THE diseases and ailments to which horses are subject are numerous and of great variety. Some of them are not of a serious nature, and are simple in character, admitting of being successfully treated by the amateur, and not necessitating the calling in of a veterinary surgeon. The following is a list of this class of complaints: 1, Simple Diarrhœa; 2, Constipation; 3, Lampas; 4, Worms; 5, Parasitic skin diseases; 6, Surfeit; 7, Sore shoulder and sore back; 8, Slight cold and cough. The nature and treatment of these complaints is as follows:—

Simple Diarrhoea.—This complaint is caused through the digestive system being upset by improper food or by a sudden and abrupt change of diet: a slight chill may also give rise to it. Treatment consists in keeping the animal warm and comfortable, and giving it rice-water or flour-gruel to drink instead of the drinking water. Two one-ounce doses of bicarbonate of soda should be administered in the food each day until the purging has ceased. The allowance of corn may

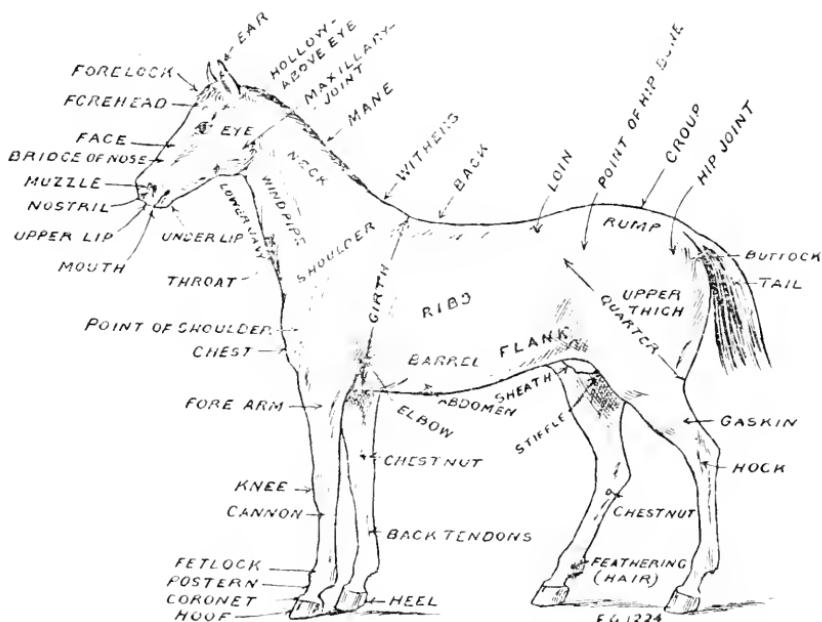


DIAGRAM SHOWING PARTS OF A HORSE.

(Drawn by G. Jensen.)

be slightly reduced, and no laxative food must be given. Light work or exercise is beneficial, but should be of a slow nature, and the horse should not be taken out if the weather is very wet. If the purging does not cease within a few days, a ball, composed as follows, must be administered: ball—powdered opium 1 drachm, powdered catechu 2 drachms, sub-nitrate of bismuth 2 drachms, and sufficient treacle to make up into a ball.

Constipation.—This is caused by the food being of a dry nature, and by the want of laxative food in the diet. When a horse is suffering from constipation, the dung is hard and dry in texture, dark in colour, bad-smelling, and closely balled into small-sized pellets. Treatment consists in administering a pint or a pint-and-a-half of linseed oil, and giving plenty of laxative food, such as green forage, roots, and bran and linseed mashes. The allowance of corn should be somewhat reduced, and no straw must be fed. In default of linseed oil, Epsom salts may be given, the dose being half a pound, to be given as a drench, dissolved in water. Should linseed oil fail to act satisfactorily, Epsom salts must be tried after a couple of days. The horse can be worked as usual.

Lampas.—The complaint known as "lampas" consists in a swollen condition of the roof of the mouth, which latter will, as a consequence, project beyond the level of the incisor teeth. The roof of the mouth is also more or less tender. A horse suffering from lampas does not eat his food with relish on account of the tenderness of the palate. The causes of the complaint are indigestion and cold, while in the case of young horses, the cause is frequently teething. Treatment consists in giving a quarter of a pound of Epsom salts daily in the food for three days, and increasing the allowance of laxative food. If cold is the cause, the latter must be treated. In the case of lampas caused through teething, the palate may be bathed with a strong solution of alum in water about three times a day, until the swollen condition subsides. The horse should only be worked lightly until it eats its food as usual.

Worms.—Young horses are particularly liable to suffer from worms, but these parasites also affect old or very poor horses. A horse infested with worms loses condition, becomes pot-bellied, and the coat looks rough; there is a general appearance of unthriftiness, despite a good appetite and plenty of food. Worms are also frequently passed in the dung. There are several different kinds of worms parasitic in the horse, which vary in size and shape. All are whitish or yellowish in

colour; their size ranges from one or two inches to as much as twelve inches. To rid a horse of worms, the following treatment is suitable: Give on an empty stomach a powder composed as follows: santonine 1 drachm, powdered areca nut 6 drachms. Mix with a little oatmeal, and give in a small bran-mash. No food should be given for about three hours after the medicine has been administered. A similar dose should be given after a week has elapsed, and the following day a drench, composed of three ounces of turpentine and one pint of linseed oil should be administered on an empty stomach. The horse must be rested for forty-eight hours afterwards. After the drench, 2 drachms of sulphate of iron should be given daily for a week or ten days in the food. In the case of mares that are heavy in foal, the turpentine and linseed drench must not be given. For yearlings and two-year-olds, half the quantities prescribed for the drench should be administered, and 1 drachm of sulphate of iron instead of 2 drachms must be given. Salt is a useful preventive of worms, and it is therefore a good plan to keep a lump of rock salt within reach of young horses at all seasons of the year. Horses contract worms either through drinking water containing the germs (or embryos) of worms or by eating damp grass or other green forage to which these germs are adhering.

Parasitic Skin Diseases.—Horses sometimes suffer from the attacks of mange-mites, which cause an eruption on the skin and the plentiful production of scurf, together with a considerable amount of itching. Treatment consists in first removing the hairs on the parts affected by clipping if the coat is long, and then scrubbing the latter with a brush and warm water and soft soap. When the scrubbing has been thoroughly carried out, any of the following remedies may be applied, they being well rubbed into the skin: (1) Sulphur ointment, (2) a solution of 1 ounce of creolin in 1 pint of water, (3) a mixture of 2 ounces sulphur, 2 ounces oil of tar, and 1 pint sweet oil. The usual causes of horses contracting parasitic skin diseases are neglect to keep the skin clean and dirty stables.

Ringworm.—Another parasitic skin disease to which

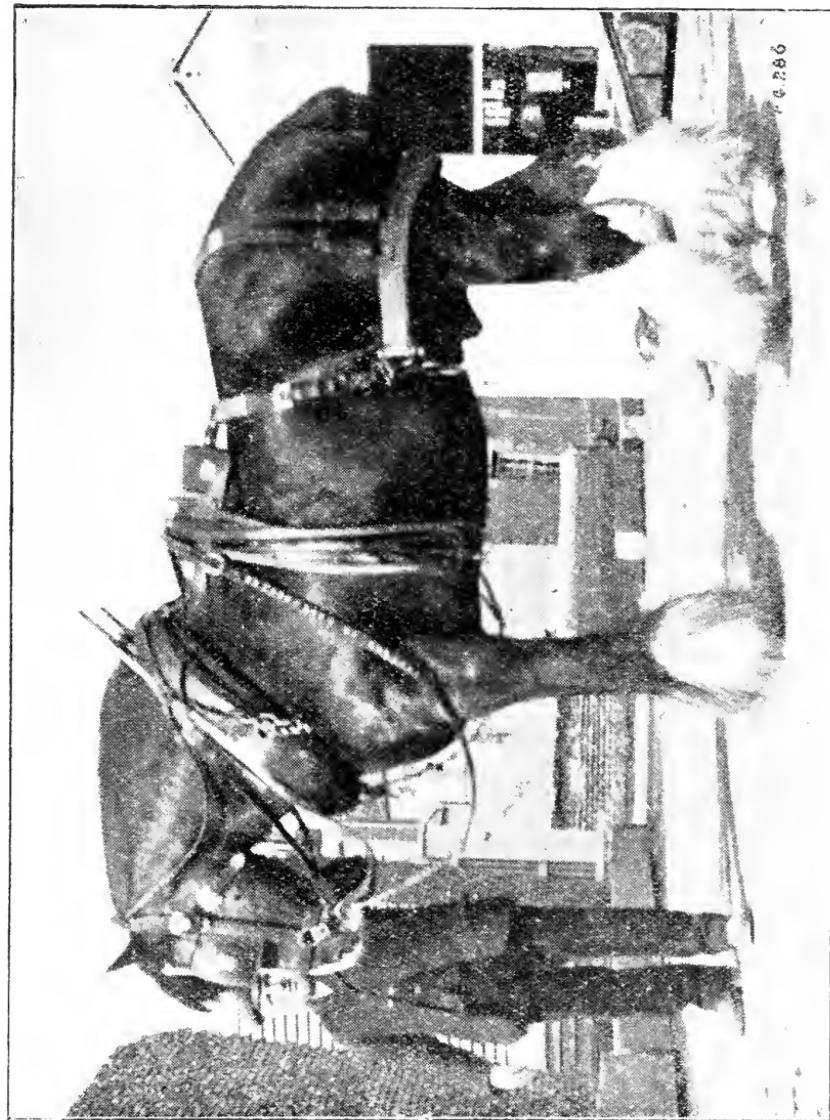
horses are subject is ringworm. When a horse suffers from this complaint, circular patches of bare skin appear, owing to the hairs breaking off at the roots. The treatment is similar to that prescribed for parasitic mange. Ringworm is contagious, and transmitted from one horse to another by means of harness, saddles, and grooming brushes. Care must therefore be exercised not to transfer the complaint from one horse to another.

Surfeit.—The complaint known as surfeit consists in an eruption of small lumps or boils on the horse's body and neck. These boils are painful to the touch, and, after two or three days, scabs are formed on them which drop off after a time. Surfeit is brought on through improper feeding and over-feeding on too rich food. Treatment consists in putting the horse on a fairly laxative and reduced diet, which includes plenty of bran-mashes and roots or green forage, and in giving a pint of linseed oil as a drench. A one-ounce dose of bicarbonate of soda should also be given in the food once a day. Some mercurial ointment should be applied to the boils.

Sore Shoulders.—Sore shoulders are caused through the harness collar galling them. The best preventive of this complaint is a properly fitting and well stuffed and well lined collar. Slight cases may be treated by bathing with a strong solution of alum in water several times a day, and keeping the animal out of harness until better. Other cases may be relieved by applying Friar's balsam or boracic ointment. If there is any swelling on the shoulders after work, some whisky or methylated spirits should be well rubbed in, the rubbing being continued for about ten minutes. In the case of young horses that are being broken in to the collar, it is a good plan to sponge the shoulders with a solution of salt in water after return from work, as this treatment hardens the skin, and acts as a preventive to sore shoulders to some extent.

Sore Backs are caused through the part being galled by

Fig. 286



Good Type of Shire Cart Horse.

the harness saddle or the riding saddle. The treatment is the same as recommended for sore shoulders.

Slight Cold and Cough.—This ailment is caused through the horse catching a chill in some way or other. The symptoms are a running from the nostrils and eyes, dull coat, sneezing, the presence of a cough, and general languidness of behaviour on the part of the horse. A horse suffering from cold should be kept warmly housed and clothed if necessary, but plenty of fresh air in the stable is also essential. Severe fast work must be avoided, but light and slow work or exercise is beneficial, provided the weather is dry and fine; the horse must not be exposed to wet. A one-ounce dose of nitrate of potash may be given once a day in the drinking water. The throat may be rubbed with a liniment. The food should be damped, and a little linseed oil may with advantage be mixed with the corn. The diet must be fairly laxative, and should include bran-and-linseed mashes.

Other Illnesses.—The ailments which have been treated of constitute only a small number of those to which horses are subject. There are a good number of others which occur frequently in horses, but the treatment of which is outside the scope of the horse-owner. They can only be satisfactorily dealt with by a qualified veterinary surgeon, and the latter should always be called in without delay whenever a horse falls ill, and the owner or attendant notices that there is something the matter with the animal. Many cases of loss to horse-owners occur through delay in obtaining the advice of a vet., valuable time being lost in procrastination.

The more common diseases, of a more or less serious character, are as follows: Colic, strangles, severe catarrh or cold, bronchitis, inflammation of the lungs, and influenza. There are some details about these which the horse-owner will find useful to know, and these are therefore given.

Colic.—This is also known as "gripes," and consists in a serious disturbance of the digestive system. Horses suffering

from colic evince great pain. When an attack comes on, they are restless, paw the ground with the fore feet, and look around with an anxious eye; they frequently turn their heads towards the flanks. During an attack, they lie down and roll about, and then get up again; they sweat freely, and make attempts to stale, while the breathing is often quick, and the belly may or may not be distended. A vet. should be called as soon as possible, but meanwhile, the pain should, if possible, be relieved by administering a dose of whisky or brandy, the dose being about six ounces of the spirit in a quart of warm water. The region of the belly should be rubbed with wisps of straw, and the patient must be kept warm. If the colicky pains continue, and the vet. does not turn up sufficiently early, a second dose of whisky or brandy may be administered, after about three hours.

Strangles.—This disease affects young horses, and is of an infectious character. Most young horses suffer from strangles at some time or other, and once they have had the disease, they are generally immune to it. The symptoms of strangles are as follows: A certain amount of fever is present, and the horse shows dulness, loses its appetite, and the coat stares. The glands between the jaws and at the throat become swollen and are painful. There is a yellowy discharge from the nostrils, at first thin, but later on of a thick consistency. Cough may or may not be present. After a time, an abscess is formed in the swollen glands, and comes to a head usually after about ten days. In severe cases, the animal experiences difficulty in breathing. In mild cases, and provided there are no complications, veterinary aid is not required. Treatment consists in housing the patient comfortably and warmly, but the stable must be kept well ventilated; the diet should be of a laxative nature, and plenty of bran-mashes, roots, and green forage should be given. If thought necessary, some linseed mashes and some oatmeal gruel may also be provided. The hay should be damped, and the oats scalded. A dose of half an ounce of nitrate of potash should be given once a day in the drinking water, which latter must have the chill taken off in cold

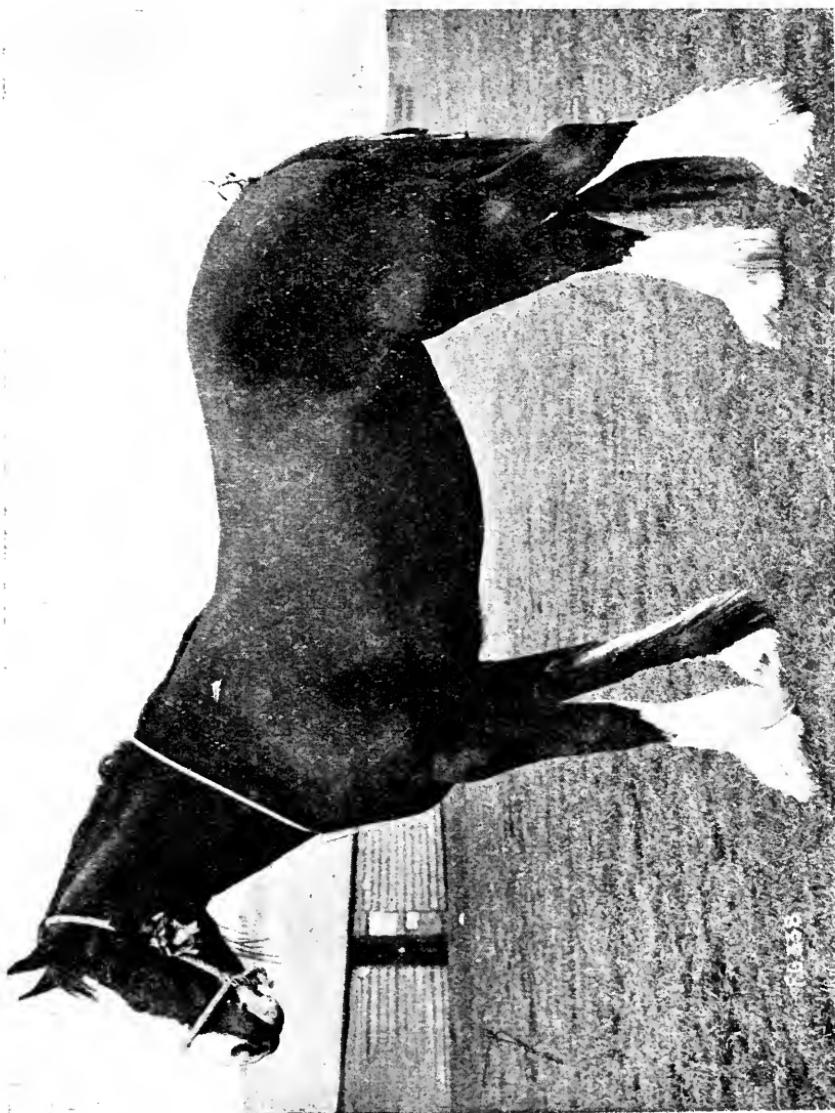
weather. On the abscess breaking, the wound must be kept clean by washing with warm water, and, after washing, it should be dressed with a solution of one part carbolic acid in fifty parts water. In bad cases, and when the disease does not run a regular course, a veterinary surgeon should be called in. Owing to the infectious character of strangles, a horse suffering from this disease should be strictly isolated.

Severe Catarrh and Cold.—Unless properly treated a severe catarrh and cold may lead to complications, and the inexperienced horse owner should therefore obtain competent advice as to treatment.

Bronchitis.—This disease consists in inflammation of the windpipe and of the bronchial tubes, and is most generally caused through the horse catching a bad cold. If an ordinary cold is not attended to, and neglected, it may develop into bronchitis. In addition to the patient having the general appearance of being ill, the breathing is quick, cough is present, there is a discharge from the nostrils, and on placing the ear against the horse's chest and listening to the breathing, a gurgling sound is heard. Veterinary advice should be obtained immediately, as the disease is of a serious nature.

Inflammation of the Lungs.—This is a highly serious disease, and often ends fatally. It is usually brought on through the animal catching a bad chill; both a cold and bronchitis may develop into inflammation of the lungs (or pneumonia) if the former ailments are neglected or not treated properly. This disease may also be caused through congestion of the lungs, which latter is sometimes brought on by over-exertion, particularly in the case of horses that are not in thorough working condition. A veterinary surgeon must be called in at the earliest opportunity.

Influenza.—This disease is of a highly infectious character, and usually runs through the entire stable once it makes its appearance. Horse-owners must be very careful not to



MR. THOMAS SMITH'S CHAMPION CLYDESDALE FILLY, "JENNY LIND,"
Winner of First Prize and Championship at the Royal Show, Carlisle, 1902.

expose their horses to the infection when the disease is prevalent in the neighbourhood. An attack of influenza may be of a comparatively mild nature, or it may be severe in character. The more severe form of the disease is popularly known as "pink-eye." An attack of influenza comes on very suddenly, and without any preliminary symptoms. It has a very weakening effect on the horses. Among the chief symptoms are great dulness of the patient, feverishness, loss of appetite, staring and dull coat, and much weakness. In addition, there is more or less discharge from the nostrils; the eyes are watery; digestive disturbances may or may not be present, and there is some stiffness of the limbs; the latter may also become swollen. Veterinary treatment is required.

Nursing Sick Horses.—In illness, good nursing, comfortable housing, warmth, and fresh, pure air, are essential to the recovery of the patient, and the treatment prescribed by the veterinary surgeon must always be supplemented by these various things. When a horse has recovered from an illness, it must be brought into work again in a very gradual manner, as it will be weak and out of condition. Some time will elapse before the animal regains its full strength. At first, it must be worked very lightly, and not be put to severe exertion. Its feeding should also receive special attention for some time after recovery: it must gradually be brought on to a full allowance of corn, and when this has been done, some extra corn, in addition to the usual ration, may be given, so as to help the horse to regain its strength quickly.



CHAPTER XXI.

FORMS OF UNSOUNDNESS.

THE forms of unsoundness which affect horses may be divided into three classes, viz., (1) unsoundness of wind, (2) of eyesight, and (3) of limb. The forms of unsoundness of wind are roaring, whistling, and broken wind.

“**Roaring**” is generally caused by paralysis of one or of both muscles which open the larynx, and is incurable. The fact of a horse being a roarer is evidenced by its making a characteristic sound, called “roaring,” when the animal undergoes exertion, either by moving at a fast pace or by having to draw a heavy load. In some cases, the unsoundness is not nearly so much developed as in others; it usually gets worse with age. Ponies are rarely affected by this form of unsoundness. To find out whether a horse is a roarer or not, its wind must be tested: in the case of light horses, this is done by galloping them or by driving them at a fast trot, if possible up a hill. The wind of heavy horses is tested by making them draw a heavy load up an incline. Having subjected the horse to sufficient exertion, the breathing should be listened to by standing near the animal’s head. If the horse is “touched in his wind” the characteristic sound of “roaring” can readily be heard. Frequently, the plan of “coughing”* a horse is

* “Coughing” a horse consists in compressing the larynx with the fingers for a few seconds. If the horse coughs after this the animal is supposed to be sound in its wind as regards roaring. If the horse fails to cough on the larynx being compressed, it is assumed that this fact is evidence of its being a roarer. The coughing test is not a satisfactory one, and by no means reliable.

resorted to in order to test the wind, but this is not a satisfactory method. The fact of a horse being a roarer greatly detracts from its market value, but it need not necessarily interfere with its working capacity. Roarers are perfectly capable of performing work at a moderate trot or of doing draught work satisfactorily. If the roaring is very bad, tracheotomy may have to be resorted to, and a tube inserted in the neck. The infirmity of roaring is often due to hereditary causes, or it may be the result of the horse catching cold and developing a bad cough, or it may be an after-effect of strangles.

“**Whistling**” is brought about by some portion of the air passage being thickened or contracted. A horse affected with this unsoundness emits a shrill or “whistling” noise when put to severe exertion. For all practical purposes, whistling may be looked upon as being a form of roaring. It is incurable.

“**Broken-wind**” is a very serious infirmity, which has its seat in the lungs. It greatly interferes with the animal’s capacity for work, and unfit it for fast work; a broken-winded horse may be able to do work at a slow trot, and can perform slow draught work if its powers are not too severely taxed. A horse affected with broken-wind should never be bought. The disease is incurable. The following are the symptoms: When the horse is standing in the stable, it makes two separate efforts every time air is expired, instead of only one effort as sound horses do; the flanks are also heavily heaved. When put to work, the breathing becomes quick and laboured; the faster or the heavier the work is, the greater does the distress in breathing become. A chronic cough accompanies broken-wind.

Unsoundness of Eyesight consists in the horse being partially or wholly blind in one or both eyes. Horses with defective eyesight are more apt to stumble than those whose eyes are sound, because they cannot see properly where they are going. Partially blind horses are also very apt to

shy. Unsoundness of eyesight certainly detracts from the market value of a horse, though it need not necessarily interfere with its usefulness for work.

Unsoundness of Limbs.—The chief forms of unsoundness occurring in the limbs are as follows: ring-bone, side-bone, navicular disease, chronic laminitis, bone-spavin, and curb.

Ring-bone occurs more often in the hind legs than in the fore legs; it consists in bony deposits or excrescences being produced on the pastern, and may or may not be the cause of lameness. Treatment consists either in applying a blister or in firing; if the former proves ineffectual, the latter must be resorted to. If there is no lameness, treatment is not necessary.

Side-bone.—The unsoundness known as side-bone is found principally among heavy draught horses, and occurs chiefly in the fore-legs. It consists in the lateral cartilages of the foot becoming ossified and hard. Side-bone is felt for at the sides and back of the coronet, just above the hoof. Normally, this part is elastic, and feels soft to the touch, but if side-bone is present, it feels hard and unyielding. Side-bone sometimes causes lameness, at other times it merely causes the action to be stiff and short, while often practically no lameness is produced by this unsoundness. When not lame, cart horses suffering from side-bone are quite capable of doing team work on the farm satisfactorily. Treatment is unnecessary if there is no actual lameness. Should a horse go constantly lame on account of side-bone, neurotomy * must be resorted to, no other treatment being possible. If required for fast work, horses with side-bone must be avoided.

Navicular Disease has its seat in the horse's foot, and

* The operation known as neurotomy consists in the division of a certain nerve in the leg, which deprives the foot of sensation and therefore relieves pain.

is caused by a diseased condition of the navicular bone. It, as a rule, occurs only in the fore feet, and affects chiefly light horses used on hard roads and driven at fast paces. Navicular disease always causes lameness, and is incurable. A horse affected with it shows most lameness when first put to work; the lameness wears off to a certain extent after the animal has travelled some distance. The only treatment consists in unnerving the horse by neurotomy.

Chronic Laminitis is also a disease of the fore feet. It causes more or less lameness, and horses suffering from it are not fit for doing fast work. In many cases of this unsoundness, however, the horse can do satisfactory work as a team-horse on a farm. Chronic laminitis cannot be cured; something may be done to palliate the evil by using bar shoes. Feet affected with this disease are frequently misshapen, while generally there are a number of raised ridges or "rings" running at irregular intervals round the wall of the hoof.

Bone-spavin, which is usually briefly referred to as "spavin," is an unsoundness having its seat low down on the inside of the hock. A spavin is a bony deposit, which is produced as the result of inflammation. This bony deposit varies much in size; often it is very large, while it may be quite small and hardly noticeable. During the incipient stages of this disease, when inflammation is present in the affected part, the horse generally goes lame; and complete rest is then the principal thing required; warm fomentations may be frequently applied for a few days. Subsequently, the part should be blistered, with a view of causing the absorption of as much of the bony deposit as possible. Supposing blistering is not effectual in preventing lameness, firing must be resorted to. In many cases, a bone-spavin does not cause actual lameness, once the spavin is fully formed; the action of the affected hind leg may merely be stiff. Lameness caused by spaving always decreases and wears off, to some extent, after the horse has travelled some distance; it is worst when the animal leaves the stable. If a bone-spavin, after its forma-

tion, does not cause any marked lameness, there is no reason to interfere with it.

Curb has its seat very low down, at the back of the hock, about five or six inches beneath the point of the hock. It consists in an enlargement, which is easily visible when the hind legs are looked at from the side. Curb is the result of a sprain to the ligaments at the back of the hock. When a curb first appears, or is "sprung," it is soft and hot, and the horse shows more or less lameness. The treatment consists



A TYPICAL HUNTER'S HEAD.

(Photo by G. H. Parsons.)

in fomenting the part with hot water for a few days, and giving complete rest. The foot may be shod with a shoe provided with calkins, in order to take the weight off the seat of the curb. When all heat has disappeared, the part should be blistered. Much of the swelling subsides with the subsidence of the inflammation, but the enlargement termed a "curb" remains; this is hard in character. If, after a horse has sprung

a curb, the part remains very weak, so that sprains recur, firing should be resorted to. A curb, once it is callous, does not detract from a horse's capacity for ordinary work in any way, though its sale value is decreased by the fact of its being affected with this unsoundness.

CHAPTER XXII.

DISEASES OF THE LEGS AND FEET.

In addition to the forms of unsoundness discussed in Chapter XXI., the legs and feet of horses are subject to a variety of other diseases and complaints, the more common ones of which are included in the following list: Splints, grease, cracked heels, sprains, broken knees, windgalls, thorough-pin, bog-spavin, capped elbow, capped hock, dislocation of the patella, lymphangitis, thrush, corns, contracted heels, sand-crack, false quarter, acute laminitis, quittor, mud-fever, and stringhalt.

Splints.—Splints are bony growths, or deposits, on the cannon bone: as a rule, they are merely eye-sores, and do not cause lameness, except in some cases, while the splint is being formed. Sometimes, they produce more or less permanent lameness, owing to their interfering with the play of the suspensory ligament. Splints close to the knee also sometimes cause lameness. A splint is produced, or "thrown out," as the result of concussion on hard ground, or of a blow or knock. Young horses are particularly liable to throw out splints; frequently, splints spontaneously decrease in size or disappear almost wholly in the course of time through absorption. If the splint causes no lameness, there is no reason to adopt treatment. If it is wished to remove a splint, it may be rubbed

once a day with an ointment composed of one part of iodide of potassium and five parts of lard, this to be continued for a fortnight or longer. Instead of this, a weak blister, consisting of one part biniodide of mercury and twelve parts lard, can



HUNTER GELDING, "ORATOR."

(Photo by G. H. Parsons.)

be applied about three times, at intervals of a few days. If lameness is caused, a blister should first be tried, and, failing this, the splint must be fired.

Grease.—This complaint occurs chiefly in cart horses, and is principally confined to the hind legs. It consists in a bad-

smelling greasy discharge from the skin, and in inflammation of the latter. Some cart horses are constitutionally predisposed to contract this complaint. Want of cleanliness, dirty bedding, and wet are usually the exciting causes. If the complaint is of a bad nature, the hair, if long, should be clipped off, and the legs frequently fomented with warm water, while linseed-meal poultices should also be applied to them; this treatment to be continued for two days. Then, a lotion as follows must be applied twice a day, until a cure is effected. Lotion—one part sulphate of zinc, one part lead acetate, and fifteen parts water; apply with rag or bit of sponge. If this lotion is ineffectual, the following should be used: one ounce of copper sulphate dissolved in one pint of water; to be applied once a day. In lighter cases, the fomenting and poulticing is unnecessary, and the first-mentioned lotion should be applied: or, instead a lotion composed of one part creolin and six parts water can be used. The bedding must be kept dry and clean. Exercise is required, but the horse should be kept on dry ground. Cleanliness in the stable and good grooming will help to prevent grease to a great extent.

Cracked Heels.—This complaint chiefly occurs in light horses, and consists in an inflamed and sore condition of the skin in the hollow of the heels, while the skin is also more or less cracked. A little lameness or stiffness of action may be present. The complaint is most common in the winter season, its causes being wet and cold, as also dirty litter. In mild cases, the frequent application of lanoline or of oxide of zinc, or of a lotion composed of two parts sweet oil and one part Goulard's extract, is sufficient treatment; the heels must also be kept dry, being dried when the horse returns from work. In bad cases, fomenting and poulticing for two days, coupled with rest, should precede the application of one of the last-named two remedies.

Sprains.—Sprains to the back tendons and the suspensory ligaments of the fore legs occur pretty frequently in

horses that are jumped or galloped. In other horses, they occur less frequently, but they are not uncommon. They are always caused by an undue strain falling upon the structures named. Sprains may appear either suddenly, or they may come on gradually through prolonged strain of a severe nature. The symptoms of sprain to the back tendons and suspensory ligament * are readily detected; they consist in more or less swelling of the parts affected, in heat and pain being present, and in severe lameness. Unless the owner has any experience in treating sprains, a veterinary surgeon must be called in, except in the lightest cases of sprain. Complete rest is absolutely essential in sprains, and the patient should be placed on a laxative diet. During the earliest stages of sprain, the parts may be frequently fomented with hot water, as hot as can be borne by the hand. The fomentations should be applied every three hours or so for a day. The leg should further be bandaged with a linen bandage, steeped in a cooling lotion, composed of one part Goulard's extract, one part spirit, and eight parts of water. A flannel bandage must be put on over the linen one. The sprained parts having been fomented for a day, cold water bandages may then be applied; these must be kept continually wet and cold by pouring cold water over the leg every two hours. Plentiful and frequent bathing of the injured leg with cold water should also be resorted to. At nights a bandage steeped in the lotion recommended just now may be applied, the cold water treatment being continued throughout the day. When the swelling has subsided, and abnormal heat has disappeared, a liniment or embrocation should be well rubbed into the leg about three times a day. In bad cases, the application of a biniodide of mercury blister, 1 part biniodide of mercury to 8 parts of lard, after the inflammation caused by the sprain has subsided, is to be recommended, and the horse should be turned out to grass or into a straw-yard, some weeks' rest being given.

* The suspensory ligament lies just in front of the back tendons, and can be seen lying, and felt, between them and the cannon-bone.

Sprains are often treated by applying pressure to the injured parts, this being very effectual, but this treatment should be left to the veterinary surgeon; and its adoption by the inexperienced amateur is not to be recommended. On bringing a horse into work again after it has recovered from a sprained leg, this must be done in a very gradual manner, and care must be exercised that the animal is not worked too severely at first, for fear of causing another sprain. In the case of a horse repeatedly spraining its leg, the best plan is to fire it, in order to strengthen the part.

Broken Knees.—These are caused by the horse falling on his knees on hard ground. In bad cases, it is advisable to call in a veterinary surgeon. Complete rest must be given, and the patient must be prevented from lying down by the head being tied up sufficiently shortly. The horse must not be allowed to lie down nor must it be walked about until the wounds in the skin are healed, and there is no risk of the latter being opened again by the knee joints being bent. If the wounds are dirty, they must be cleaned by washing gently with warm water and a clean piece of linen. Then they should be dressed by dusting iodoform liberally over them. If thought necessary, a bandage may be applied loosely round the knees, some antiseptic cotton wool being put over the wound and underneath the bandage. Care must be taken not to put the bandage on at all tightly. The bandage must be removed and some fresh iodoform applied once a day, until the wounds have healed. If there is any discharge from the latter, a solution of one ounce of creolin in one pint of water should be applied twice a day by means of a small syringe, the wound subsequently being dressed with iodoform and bandaged. The growth of hairs after the wounds have become completely healed may be stimulated by rubbing in a very mild blister.

Windgalls.—These are puffy swellings about the fetlock joints, and are caused through work and wear. They are of no importance, and do not in any way interfere with the horse's usefulness, as a general rule. Bandaging will remove

windgalls for the time being, but they appear again shortly after the bandages are removed. A prolonged rest and a blister also serve to remove windgalls for a time.

Thorough-pins.—These have their seat in the hollow at the side of the hock, and are similar in nature to windgalls. The causes of thorough-pins are strain and the effects of work and wear. As a rule, they cause no inconvenience, and are merely eyesores. Rest and blistering serve to remove them to a greater or less extent for a time.

Bog-spavin.—This complaint must not be confused with bone-spavin. Its seat is at the front of the hock, and it consists in a soft swelling of varying size. It is identical with windgalls and thorough-pins as regards its nature. Usually bog-spavins are of no importance, and, like thorough-pins, they are merely eyesores. Treatment is unavailing, though rest and blistering may effect a decrease in the size of the enlargement for a time.

Capped Elbow.—Unless of very large dimensions, the swelling known as "capped elbow" is simply an eyesore, and in no wise interferes with the usefulness of a horse. The swelling has its seat at the elbow, and is caused by the heels of the shoe pressing against the elbow when the horse is lying down. If the capped elbow interferes with the movement of the limb, it should be operated on by a veterinary surgeon. The heels of the shoe of a horse suffering from this complaint should be made short, and an elbow pad, of which there are several makes on the market, may be applied at night.

Capped Hock.—This complaint is similar in nature to capped elbow. It is a swelling of varying dimensions at the point of the hock. Its cause are blows on the hock inflicted by the horse kicking the latter against the stall partition or heel-post. A horse's working capacity is not in any way detracted from by this complaint, and it is of no import beyond being an eyesore.

Dislocation of the Patella.—This consists in the patella (a small bone corresponding to the knee-cap of a human being) at the stifle joint being displaced as the result of an accidental wrench of the hind leg. It does not occur very often; it is not, however, uncommon in foals. A horse or foal suffering from dislocation of the patella goes extremely



A TEAM OF NORMAN HORSES.

(Photographed by T. W. Sanders, at Mezidon, Calvados, Normandy.)

lame, dragging its hind leg, and being unable to use it. Frequently, the patella resumes its normal position spontaneously; if this does not happen, it must be endeavoured to put

matters right by catching hold of the leg at the pastern and pulling it forward, with a view of snapping the patella into its proper place. A veterinary surgeon should be called, if the dislocation cannot be righted immediately.

Lymphangitis.—This disease, which is also known as "weed," occurs, as a rule, only in heavy horses, and is usually confined to the hind legs. It consists in the limb becoming greatly swollen, owing to inflammation of the lymphatic glands. It is often caused by the horse standing idle in the stable for some time, and through over-feeding on corn. Treatment consists in reducing the food allowance, and giving a purgative, preferably in the form of an aloetic ball, which can be obtained from any country chemist. Plenty of laxative food should be provided. Exercise must not be given until all symptoms of inflammation have disappeared. The limb should be frequently fomented with hot water, and be bathed three times a day with the following lotion: Tincture of arnica three parts, acetate of lead one part, and water eight parts. The patient must be kept warm, if necessary, by clothing. After two days from the commencement of the swelling, an ounce of nitre dissolved in water should be administered. In bad cases, the advice of a veterinary surgeon is necessary.

Thrush.—This complaint consists in a diseased condition of the inner portion of the frog. The symptoms are a bad-smelling discharge from the cleft of the frog, and decomposition of the horn of the latter. The causes of thrush are want of frog pressure, combined with the effects of wet or dirty litter. Mild cases may be cured simply by smearing some Stockholm tar into the cleft of the frog once a day for a week or less. Instead of tar, some powdered alum may be rammed into the cleft. In bad cases, all loose bits of horn about the frog should be pared away, and the following ointment applied to the inside of the cleft: one ounce sulphate of copper (blue stone), one ounce lard, and two ounces Stockholm tar. Plenty of frog pressure is also necessary, in order to effect a cure and

prevent a recurrence of the complaint. The bedding, too, should be kept dry.

Corns.—The complaint known as corns consists in a bruise of the sole at the heels. Corns appear chiefly in the fore feet, and are due to bruises of the sole caused by bad shoeing and ill-fitting shoes. Shoes which are too short at the heels are a great cause of corns. Some horses are particularly liable to suffer from this complaint. The symptoms are more or less lameness, and a reddish or brownish spot in the horn of the sole near the heels. Treatment consists in removing the shoe and paring away some of the horn of the sole where the "corn" is situated. A three-quarter shoe or a bar-shoe should be applied, the idea being to prevent any pressure falling on the region of the "corn," so as to relieve it. In bad cases of corn, there may be suppuration; in this case, sufficient horn must be removed to allow the matter to escape, and poultices should be applied for a couple of days or longer, the patient being rested meanwhile. Subsequently, a three-quarter or bar should be applied. Horses worked on hard ground at fast paces are most liable to suffer from corns.

Contracted Heels.—A foot suffering from contracted heel is very narrow at the heel, and the frog is in a shrivelled up condition and small. Heels become contracted through the frog and bars of the hoof being pared when the horse is shod, through the continued presence of thrush in the frog, and as a result of navicular disease. In bad cases of contracted heels, the action may be more or less stiff. The complaint, if it is appreciable, detracts from the market value of a horse.

Sand-crack.—This complaint consists in a vertical or downward fissure or crack (A) in the wall of the hoof. It occurs both in the hind and the fore feet, and is caused either by concussion or by strain to the wall of the hoof. Sand-crack may, or may not, cause lameness. Treatment is as follows: If lameness is present, the horse must be rested, and the foot should also be poulticed for a day or two. If the lameness does not subside, a veterinary surgeon should be called in. The crack

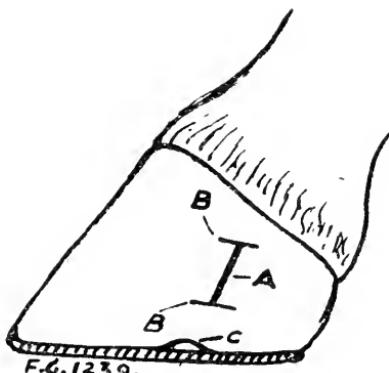
must be prevented from extending by cutting a horizontal notch (B B) at either end, thus :



If the crack extends up to the coronet, a V-shaped notch should be cut at the lower end, thus :



Next, the sides of the crack should be riveted together by means of a horseshoe nail, the head of which must be filed flat on one side, the flat side to be against the hoof. The nail must be clinched down at both ends. Further, in order to take pressure off the crack, the part of the wall underneath the sand-crack should be prevented from coming into contact with the shoe by paring a slight hollow (C) in it before applying the shoe. See following sketch :



F.G. 1239.

SHOWING MODE OF EASING SAND-CRACK BY PARING WALL.

In the course of time, a sand-crack will disappear by its being pushed down further and further by the growth of new horn at the top of the hoof.

False-quarter.—This is characterised by a downward depression or actual fissure (like sand-crack, but much wider) in the wall at the quarter, extending from the coronet. The complaint is caused by an injury to the horn-secreting struc-

ture at the coronet, which permanently prevents the formation of sound horn at the part. False-quarter cannot be cured, but it may not interfere with the usefulness of horses for slow work.

Acute Laminitis.—This most serious disease of the feet is also known as "inflammation of the feet," or "acute founder." It consists in inflammation of the sensitive part of the foot, and occurs chiefly in the fore legs. Several causes give rise to acute laminitis, the chief ones being severe concussion to the feet, continued want of exercise, feeding on too rich and heating food, colic, and superpurgation, while it often appears in the train of some other illness. The disease causes great pain to the horse, and makes it go dead lame. The patient suffers from fever, and evinces much pain by its uneasy behaviour, quick breathing, loss of appetite, etc., nor will the animal move on account of the pain this would cause. The feet are hot, and on being tapped with a hammer, the horse shows increased pain. Veterinary assistance should be called in, as treatment by an inexperienced amateur is out of the question. Recurrent attacks of acute laminitis lead to a condition of the feet known as chronic laminitis. (See page 108.)

Quittor.—The term quittor is applied to an abscess in the foot, which has its opening at the coronet. Quittors occur chiefly in heavy horses, and are caused by serious injuries to the foot, such as a tread from the opposite foot, or a severe blow or bad prick in shoeing, etc. A quittor should be treated by the veterinary surgeon.

Mud-fever.—This complaint consists in an inflamed condition of the skin of the legs and sometimes also of that of the belly. The patient generally shows feverish symptoms in addition to the local symptoms. Considerable soreness is present in the affected limbs. Mud-fever attacks principally light horses. Treatment consists in giving rest, and putting the horse on a laxative diet. Frequent fomentations to the inflamed parts of the skin with a solution of Goulard's extract in warm water, in the proportion

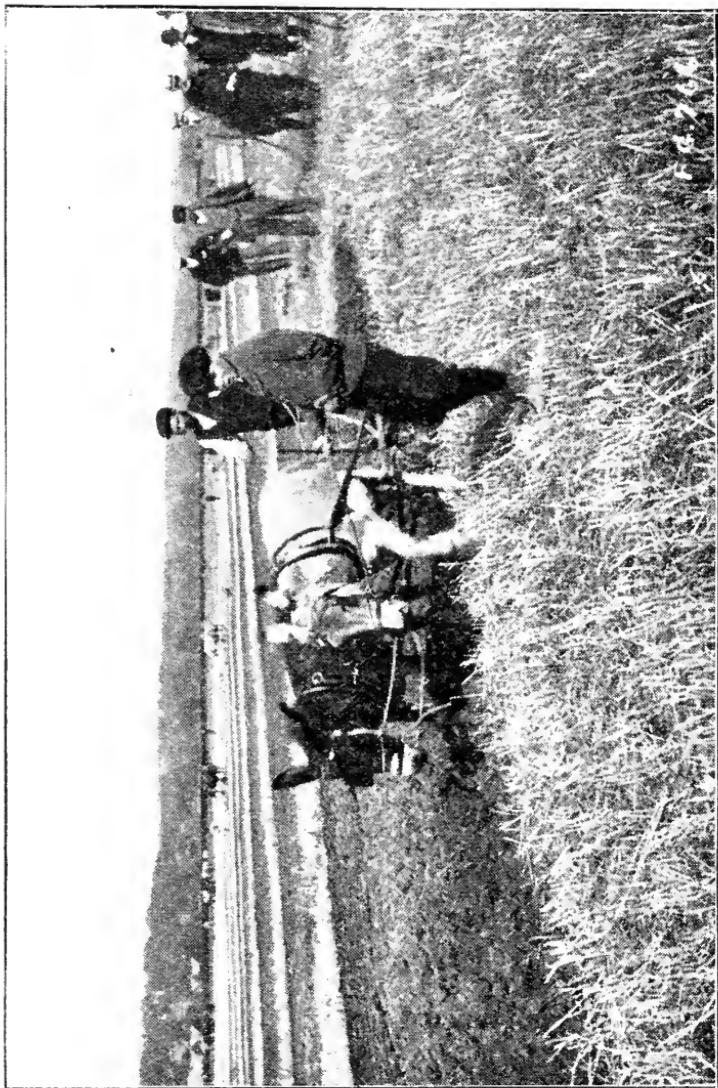
of one ounce of the former to one pint of the latter, or with a lotion composed of one part creolin, five parts glycerine, and one hundred parts water, should be applied, say, every two hours. Three-quarters of an ounce of bicarbonate of potash, dissolved in the drinking water, should be administered once a day. The complaint appears in winter, especially in wet and raw weather. The practice of clipping the legs predisposes horses to contract mud-fever, and the same applies to the washing of the legs in winter. The latter practice must, therefore, be avoided.

Stringhalt.—This complaint causes the horse affected by it to lift one hind leg abnormally high when moving, and to flex the hock joint unduly. It is incurable, and usually gets worse with age. It considerably detracts from the market value of a horse. Horses affected with stringhalt may be perfectly able to do fast work, and can in all cases perform slow work.

CHAPTER XXIII.

DONKEYS.

ALTHOUGH donkeys are very frugal, and will content themselves with comparatively little and rough food, they require to be well fed on suitable food if they are to be kept in fit condition for doing hard work. As is the case with horses and ponies, donkeys must be kept in good working condition by proper feeding, in order to be up to their work, and good working condition can only be maintained by giving a sufficient allowance of corn.



A PAIR OF DONKEYS PLOUGHING.

Food and Feeding.—Both oats and maize are suitable kinds of corn for donkeys. Oats deserve preference over maize so far as regards suitability, but maize is very often the more economical foodstuff. A mixture of oats and maize, consisting of equal parts of both, is a very useful one for feeding to donkeys.

There is no necessity to feed oats of first-class quality. Inferior and cheap foreign oats will answer all requirements satisfactorily, but it must, of course, be borne in mind that thin, light, and husky oats do not go as far as good oats, and that lack of quality must be counterbalanced by an increase in quantity. Maize fed to donkeys should be crushed. No hard and fast rule as to the daily allowance of corn to be fed can be laid down, beyond stating that the harder the donkey is worked the more corn does the animal require. A liberal allowance of corn is certainly necessary if the donkey is required to make use of its trotting and working capacity to the utmost. The daily ration of corn may range from three to six pounds. It should be divided into three feeds, one being given first thing in the morning, the other at midday, and the third last thing in the evening. A plentiful allowance of chop, consisting of chaffed hay and straw, should be mixed with the corn. Some long hay must also be included in the daily bill of fare: a small quantity of this should be given at the morning feed, and a little ought to be supplied once or twice in the course of the day, while last thing in the evening as much hay should be given as the donkey will clear up over-night. The amount of hay required varies considerably in different cases. Some donkeys have naturally bigger appetites than others, and the more corn a donkey receives, the less hay will it eat. An allowance of one truss of hay per week is a very liberal estimate, and, in many cases, the consumption of hay will not amount to this quantity. There is no reason for supplying hay of prime quality; inferior and coarse hay will answer perfectly well, and either meadow or seeds-hay is suitable.

Grazing.—During the spring, summer, and autumn, donkeys should be turned out for several hours a day to

graze, if there is an opportunity of doing so. Any rough grazing will answer satisfactorily, as donkeys are not dainty by any means. Failing an orchard or paddock, a donkey can be grazed on a common or on the road-side. When the donkey obtains food by grazing, only very little hay need be provided. During the winter, and when donkeys cannot obtain any succulent food by grazing, they should receive an occasional supply of carrots, and a small bran-mash at intervals ought also to be provided. A handful of oats may be mixed with the bran-mash. It must not be forgotten to place a lump of rock salt within reach of the donkey. The watering arrangements should be the same as advised in the case of horses and ponies.

Housing.—Donkeys may be stabled in any available shed or building. Their stable should be well ventilated, but must be free from draughts. It is desirable that it should be fairly warm in the winter, especially if the donkey is clipped. Neither a manger nor hay-rack are necessary; if these are provided, they must be fixed very low. A wooden box, placed on the floor will answer perfectly well as a manger, and this should be removed after each feed. The hay can also be placed on the floor in one corner of the stall. Donkeys do not require to be tied up in their stall; they should be left loose. They may be confined to their stall by fixing two wooden bars about two feet apart across the entrance, the bars being placed in slots in the heel-posts or in the wall, as the case may be. This arrangement practically converts a stall into a loose box. If desired, a wooden door can take the place of the bars, but this is not necessary. The size of the stall or loose box, should not be less than five feet wide and eight feet in length, but it will add to the comfort of the animal if more space is allowed.

Grooming, Clipping, and Clothing.—Donkeys ought to receive a fair amount of grooming every day, so as to keep the coat and skin clean, and to prevent the hairs from getting matted together. It is not sufficient to brush off

the superficial dirt adhering to the coat, but the brush must get right down to the skin, and all loose dandruff must be removed, in order to keep the pores open. Donkeys generally grow a heavy winter coat in the autumn, and this may be removed by clipping as soon as it is fully grown. If the donkey is required to do much fast work, it is certainly advisable to clip it, as the thick winter coat will, to some extent, interfere with the animal's trotting capacity. If donkeys are clipped, it will generally be necessary to repeat the clipping operation a second time about Christmas, or a little later. Warm housing and clothing will, of course, help to keep the coat short in the winter months, while these means will also cause an early shedding of the winter coat. Provided a donkey is housed moderately warmly, it is not necessary to put a rug on the animal, even when it has been clipped, but if the stable is cold, a rug ought to be supplied. An ordinary wool-lined jute rug is very suitable for rugging a donkey; but a rug made by sewing together two sacks will answer satisfactorily. By clothing a donkey after clipping, the fresh growth of the hairs is retarded, and the coat thus keeps short. When a donkey is turned out in the early spring or late autumn, in order to get some grazing during the day, a rug or sacks may, if desired, be thrown over its back, in order to keep it warm and the coat short.

Shoeing Donkeys.—Like ponies, donkeys require to have their feet shod in order to protect them against undue wear on hard roads. They should be shod once a month, and the shoes require to be of medium thickness; calkins must be avoided.



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